Taxation policy and financial instruments : application of finance concepts to swaps

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Publication Date:
1997

DOI:
https://doi.org/10.26190/unsworks/7566

Taxation Policy and Financial Instruments: Application of Finance Concepts to Swaps

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A Thesis submitted in partial fulfilment of the requirements of the degree of Master of Commerce (Honours) to the University of New South Wales.

1997

CERTIFICATION

I certify that this thesis has not been submitted for a university degree or for any similar award

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01-Jun-97

ACKNOWLEDGEMENT

The author wishes to thank the following people and organisations: John Masters, of Price Waterhouse, for discussions and a copy of his 1993 AIC paper on the tax treatment of swaps and other financial instruments; Roger Paul of the Australian Tax Office, Canberra, for some useful clarification, Professor Roger Bowden, my previous supervisor, and Dr. Gabriel Noti, my current supervisor, for some very useful comments and drafting help; and the NCBC for material support. I would also like to thank Barclays Bank Australia Limited for supplying me with the necessary database on interest rate swaps. Of course, given the highly contentious area of tax policy, none of the above people or organisations should be taken as necessarily agreeing with the paper's content, and all responsibility for interpretational or other errors remains the author's alone.

ABSTRACT

The explosion of derivative instruments to handle risk management, cash flow management, or outright position taking, has been accompanied by a considerable degree of confusion and controversy as to the most appropriate tax treatment of the cash flows generated with their use, both in Australia and overseas. The discussion has generally focused on issues such as the appropriate tax base ('due and receivable' versus 'daily accruals' or 'mark to market'), or distinctions between the various financial instruments such as swaps, bills, options etc. or of key concepts such as income ('unrealised' versus 'realised'), or between activities ('hedging' versus 'trading').Underlying such problems is the central issue of methodology for determining the correct economic income and wealth of the transactions involved, which itself requires more fundamental consideration of the classic public finance aspects of efficiency, neutrality and equity, and of the primary economic purpose for using such instruments.

The analysis and results of this thesis, show how to identify economic income, and note that it can be split into two components, the current component representing a risk-free return on wealth, and a non-current gain or loss generally arising out of uncertainty. Once these are defined, then other requirements arise. For instance, it becomes possible to apply different taxation considerations or possible differential tax rates to the two income components. The generation of economic income in terms of the balance between the current and the non-current elements can therefore have a dramatic impact on taxable income, depending on the term structure environment. The model is shown to evolve from the mark to market rule which itself is shown to be the only current alternative to correctly identify total portfolio economic income. The analysis is conducted on income from a swap portfolio and overall, points to the need for a unified economic treatment of taxation income and its assessment.

The model proposed in the study, shows that the differences in taxation assessment of income that are found between the various rules, diminishes as portfolio volatility of income is reduced. The significance of such a result lies in that the study endorses the use of market valuation models to assess income from portfolios with varying degrees of risk, ranging from the 'hedging' (low volatility) portfolio to the 'trading' (high volatility) portfolio. Implicit in the results is an acknowledgment that no portfolio is homogeneous with respect to risk. Total portfolio income in the proposed model, is shown to represent a combination of a risk-free and risky element. It is only the relative composition of the two that distinguishes one portfolio of cash flows from another.

The methodology used in the study is relatively simple.The study examines changes to the risk-free and risky components of portfolio income by controlling the risk parameters for a given portfolio. At the same time, it also examines changes in correlation of income assessed under

the alternative rules currently in use and the proposed model. The two parts to this study are related because of the finding that the lower the volatility of income of a given portfolio, the lower the risky component of income is likely to be in overall economic income, and the higher the correlation among the alternative rules and the proposed model.

It is found however, that the ability of the proposed model to clearly separate the two components of income in a portfolio, is not as strong as the link between the correlation among alternative rules for income assessment and the absolute level of portfolio risk. This is likely to be attributed to the quality of the index used to measure portfolio risk It however, does not detract from the major objective of the study which is to evaluate and quantify economic income from a swap portfolio on a risk - adjusted basis.

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taking behaviour.

Thus, there is now a substantial body of finance literature that demonstrates the impact of taxation on investor portfolio selection and trading strategies. Implicit in the conclusions of such authors is that there exists no taxation approach that could be regarded as wholly neutral or efficient, as long as the taxation approach adopted continues to discriminate on the basis of factors other than risk-bearing. Therefore, the concept of pure neutrality breaks down in a world where a taxation basis differentiates cash flows on the basis of ordinary income from capital, debt from equity, and creates asymmetries between the treatment of tax losses and taxable gains. Leaving aside the debt versus equity distinction, which itself is based on risk considerations, discriminations arising from other concepts is based on macro-economic policy considerations. Far from discouraging the creation of artificial definitions, case law and the professional literature have attempted to formalise rules on the characteristics and the purpose for which financial instruments may be used. This has only added to further confusion to a debate still grappling with continuing innovations in financial technology, such as the development and use of financial derivatives. These developments now openly challenge many previously established definitions and concepts such as the distinction between income and capital, debt and equity, and between hedging and trading. This only adds to the very distortions and inefficiencies that the tax authorities are so keen to avoid.

The scheme of the rest of this Chapter is as follows: Section 1.2 examines the literature in both finance, accounting and tax circles to gauge the extent of debate in this area. In so doing, key definitions and concepts which have underpinned current debate will be analysed. Section 1.3 examines current legislation both in Australia and comparable overseas countries such as the UK, US and New Zealand and summarizes the differing approaches that have been adopted in tackling the central problem of methodology.

1.2 LITERATURE SURVEY & KEY DEFINITIONS:

As mentioned, the finance literature has demonstrated the relevance of taxation to investor trading and risk-bearing behaviour. It is therefore surprising, that finance literature has not gone further into the development of taxation rules to tackle the largely unresolved question of methodology for measuring taxable income. This has been left to the accounting and legal professions. The result has been that key concepts such as 'income' and 'wealth', that have largely been developed in finance theory, have been ignored in the debate. Instead, the accounting profession has contributed by being preoccupied with attempting to translate the historical cost versus market value distinction into taxation rules for 'hedging' and 'trading' transactions while the legal profession has contributed by attempting to set in concrete, legislative definitions that have only proved to be unduly restrictive and create unintended distortions in the taxation system. Examples of such distortions are seen in detail in Chapter Two.

A useful starting point is to introduce and examine the

CHAPTER ONE

CONCEPTS AND DEFINITIONS

1.1 INTRODUCTION:

The development of alternative tax regimes to comply with criteria such as 'neutrality', 'efficiency' and 'equity' has long been an agenda for the literature in public finance. However, the extension of these ideas to the area of financial economics has been of much more recent genesis and is still incomplete. Probably, the first systematic treatment of this area is the work of Modigliani and Miller (1958, 1963) on the implications of taxation for the firm's capital structure, and pricing decisions for investment projects.

Extensions of this work have looked at optimal trading strategies for certain debt instruments in light of personal and capital gains taxes. Constantinides and Ingersoll (1984) attempted to unify two different strands of research into bond pricing, namely, the equilibrium theory of bond pricing developed by Cox, Ingersoll and Ross (1981, 1983) on the one hand, and the theory of optimal trading of stocks and options in the presence of personal taxes (Constantinides (1983, 1984) and Constantinides and Scholes (1980)) on the other. They concluded that transaction costs and the differential tax treatment of ordinary income from capital gains were key influences on optimal trading policy. Litzenberger and Rolfo (1984) examined the tax effect of capital gains on relative bond prices and found support for the conclusions drawn by Constantinides and Ingersoll.

These studies attempted to show that taxes are an important consideration when examining alternative trading strategies. Further empirical analysis along these lines has been conducted by Arak (1983), Brick and Wallingford (1985), McDonald (1986), Vishwanath (1989) and Eytan (1990). The conclusions of these studies however, are based on the particular taxation regime utilised (in the above studies, the American taxation system was used) and consequently, their results may be in part, a reflection of the possible inefficiencies in that particular taxation system.

While these studies were being conducted, a body of literature in finance was taking shape on taxation and risk-bearing. The pioneers of this work were Domar and Musgrave (1944) and were subsequently followed by Mossin (1968), Stiglitz (1969) and Richter (1970). These studies focused primarily on the nature of particular tax structures ie. progressive, regressive, flat etc. and the asymmetry between the tax treatment of gains and losses, on investor risk-taking. Their conclusions demonstrated the impact of differing taxation regimes on investor portfolio choice and risk

suitability of key definitions some of which have been used over the years and have underpinned current debate and legislation. These are:

(a) financial instruments
(b) income and wealth
(c) alternative tax rules currently in use or proposed.
These range from the 'due and receivable' (DR) to the variety of 'accruals' based methods such as the 'straight line' accruals, the 'compounding' accruals and the 'mark to market'. The first two accruals, as well as the DR approach, recognise income resulting from current events and hence income is known as being 'realised'. 'Mark to market' income on the other hand, is recognised as resulting from both current events and expectations on the outcome of future events and therefore includes both 'realised' and 'unrealised' income.
(d) hedging and trading. There is an attempt in tax accounting and legal circles to give formal recognition to the intent of use to which financial instruments are put to by their users. This has given rise to much confusion about what these terms actually mean.
(e) taxation criteria such as simplicity, neutrality and efficiency. These criteria and what they mean in the context of the current debate, are considered in detail.

1.2 (a): Financial Instruments:

An appropriate definition of the term 'financial instruments' is crucial to the debate because of its role in setting appropriate boundaries for the rest of the discussion. This is because prior to addressing questions on issues such as the methodology for identifying economic income, or what concepts such as wealth and income may mean, one must be able to have a proper understanding of the instruments that generate the income flows. The professional literature appears to have made some important contributions in this area. For instance, the Financial Accounting Standards Board (FASB) of America, in its revised exposure draft of July 1989, defines a financial instrument as 'cash, evidence of an ownership interest in an equity or a contract that is both (i) A (recognised or unrecognised) contractual right of one entity to receive cash or other financial instruments from another entity, or exchange other financial instruments on potentially favourable terms with another entity; and (ii) A (recognised or unrecognised) contractual obligation of another entity to deliver cash or other financial instruments to another entity, or exchange financial instruments on potentially unfavourable terms with another entity'.

The acceptance of this definition in its entirety, is demonstrated by its adoption in Exposure Draft ED59, published in March 1993 by the Australian Accounting Research Foundation, to propose a comprehensive set of accounting rules for the recognition of financial instruments. The definition attempts to give conceptual meaning to financial instruments, complex or otherwise, on the grounds that a financial instrument exists if there is a contractual obligation between

two parties to exchange cash or some other financial obligation. The emphasis here is on an unconditional exchange between two parties. Therefore, arrangements such as where only one party is required to deliver cash or some other financial obligation, are excluded from this definition because of the one-way nature of the contractual obligation. Also excluded are transactions where one party exchanges cash or some other financial obligation for non-cash or non-financial items.

This definition of financial instruments therefore excludes all types of physical assets such as inventories, property, plant and equipment and intangible assets such as goodwill, patents etc., nor does it include prepayments which embody a right to receive goods or services instead of the right to receive cash or other financial assets. Also excluded are arrangements where contractual rights or obligations are settled by the receipt or delivery of commodities (eg. oil, gold etc.) and equity instruments where the holder of equity may be entitled to receive a pro rata share of dividends or other distributions, but there exists no contractual rights or obligations on the part of the issuer to make such distributions.

Following the introduction of option contracts, the definition has been expanded to take account of such developments. Conditionality of rights and obligations have been introduced as a secondary requirement for arrangements that do not qualify as financial instruments under the primary definition. A right to receive or an obligation to deliver cash or another instrument may be conditional on some event. Conditional exchanges could take the form of rights and obligations in an instrument which are conditional on events within the control of one party to the contract, such as option contracts, and instruments in which rights and obligations are conditional on events beyond the control of either party to the contract eg. financial guarantees etc.

Under this definition of financial instruments, it now becomes possible to exclude all financial arrangements except for the following: (i) Unconditional receivable/payables: These include instruments such as trade accounts, loans, notes and bonds, forwards, futures, notional instruments such as swaps, FRAs etc., and repurchase agreements. (ii) Conditional receivables/payables: These include all types of options contracts and third party guarantees.

The definition is an important contibution to this debate beacuse it is sufficiently broad to encompass further development in financial technology without including arrangements, which may initially appear to be financial in nature, but do not qualify as financial instruments. Exclusion of such arrangements are desirable because any extensions of the work on the central issue of methodology for determining economic income to non-financial arrangements, must consider a range of issues arising on valuation of non-financial instruments. These issues are considerably complex and involved and could easily form the subject of another study. Quasi-financial arrangements,in which there is usually some interface between financial and non-financial instruments, also give rise to similar problems on valuation. An example of such a transaction is that of

commodities and commodity-linked instruments where for instance, movements in oil (non-financial asset) price are offset by the use of oil futures contracts (financial asset). Another example is that of offsetting the foreign exchange exposure of a non-monetary asset (eg.the value of an overseas dwelling) with a financial transaction such as borrowing funds in the overseas currency. 'Economic substance' would dictate that the gains or losses on the borrowings (whether unrealised or realised) should be matched against the foreign currency exposure of the underlying asset. In such cases, instruments are identified as 'hedging' capital items, and consequently are excluded from the list of financial instruments. The strength of this definition however, lies in its ability to draw attention to the basic characteristic of financial instruments in that they represent an obligation by two or more parties to exchange (conditionally or unconditionally) one set of intertemporally arranged cash flows for another.

1.2 (b): Income and Wealth:

The treatment of concepts such as 'income' and 'wealth' is still evolving with considerable controversy as to what they really mean. Part of the problem has been the almost exclusive reliance on case law and practice and the lack of any significant input from the finance literature to define such terms. Case law has attempted to define income in general terms. Its ultimate failure in this respect can be attributed to the rather strict view it took initially, on what consituted income. It is only the more recent cases that suggest some flexibility in view by the Courts. Some of these cases are considered in greater detail. Essentially, case law has tended to focus on two issues. The first is an understanding of 'discount expense' and whether it is to be treated in the same manner as interest expense. The second concerns the issue of prepayments and non-uniform cash flows to decide whether they are 'capital' or 'income' in nature. The first issue was examined in the Coles Myer Finance Limited vs FC of T 20 ATR (5 February 1991). It initially went to the Federal Court, in which it was asked to consider the case of bills of exchange and promissory notes and just when discount expenses were deductable, if at all. For Coles Myer and the Australian Tax Office, the issue was one of deciding on the exact timing of the discount expense. Thus, the Federal Court was asked to decide whether the expense arose immediately on issuing the bills, or whether the expense was incurred at maturity of the bills. A secondary consideration, although not specifically addressed by the Federal Court, was the issue of the exact nature of discount expense and whether it was similar in nature to interest expense. The importance of this lay in the fact that discount expenses were assessed on the due and receivable basis in which the company may be entitled to an immediate deduction, whereas interest expense was assessable on a straight line accruals basis in which the expense would be spread to maturity. Coles Myer Finance carried on business as a financier to Coles Myer and during the year ended 30 June 1984, the company drew and sold, at less than face value, bills of exchange and promissory notes. Most of the bills and promissory notes were drawn and paid in the relevant financial year. However, there were some bills and notes which, as at 30 June 1984, had not matured. Coles Myer Finance claimed an immediate deduction for the difference between the face values of the bills and notes and their selling price whereas the Australian Tax Office claimed that a deduction could not be allowed until maturity of the bills and notes. The Federal Court agreed

with the Australian Tax Office and based its judgement on an analysis of an accommodated party's obligation under a bill. It felt that, until the accommodated party met its obligations under the bill, it had no liability to reimburse or indemnify the accommodation party. Thus it incurred no outgoing until at maturity of the bills and notes. The Federal Court itself relied on the decisions in Nevill & Co. Ltd vs FC of T (1937) 1 AITR 67, in which payments by way of promissory notes were made to induce the retirement of a director. In it, the High Court had held that no deductions were available until the notes were due for payment. The Federal Court also relied upon was the decision of the High Court in Nilsen Development Laboratories Pty Ltd vs FC of T (1981) 11 ATR 505 in which deductions for accrued long service and annual leave were being claimed. In it, the High Court ruled that 'There can be no warrant for treating a liability which has not come home in the year of income, in the sense of a pecuniary obligation which has become due, as having been incurred in that year'. The High Court subsequently overturned the decision of the Federal Court in the Coles Myer case in late 1992 and ruled that the discount amount on bills and promissory notes represented interest expense and therefore taxpayers were entitled to use the straight line accruals basis for calculating taxable income.

In relation to the question of the capital/revenue distinction, the decision of the High Court in FC of T vs The Myer Emporium Ltd 18 ATR 693, 87 ATC 4363, indicated that what fell to be taxed as ordinary income might be far wider than what was previously thought and include prepayments of interest on loans. The Myer Emporium decision involved an arrangement whereby Myer lent $80 million in March 1981, to its subsidiary, Myer Finance for a period of slightly longer than 7 years. Myer Emporium then assigned to Citicorp Australia, the interest payments it was to receive on this loan from Myer Finance. The consideration for this assignment was a sum of $45.37 million, paid by Citicorp to Myer Emporium on the day of the assignment, this being calculated on the basis of outstanding interest payable under the loan agreement and discounted back to the day of the assignment. The anticipated net result of the transaction to the Myer Group would have been an arrangement whereby Myer effectively received a lump sum of $45.37 million advance from Citicorp and was able to service both the effective principal and interest attributable to that advance by way of tax deductible interest payments made by Myer Finance. Citicorp, on the other hand, would receive assessable income from Myer Finance, which would be offset against already held tax losses. Even if Citicorp did not have tax losses, it could have argued that the whole transaction was an in-substance loan arrangement, and thus categorise its receipts from Myer Finance as both receipts of (assessable) interest and (non - assessable) capital. The Australian Tax Office on the other hand, argued that the lump sum of $45.37 million was income in the hands of Myer and was therefore immediately assessable for tax purposes.

The Federal Court decided in favour of the Myer Group but was subsequently overturned by the High Court in favour of the Tax Commisioner. The High Court decided that the $45.37 million was immediately assessable as ordinary income for tax purposes under section 25(1) and the second limb of section 26(a) of the Income Tax Act. The decision can be contrasted with the decisions of the Supreme Court of NSW and subsequently, the Federal Court,

in Creer vs FC of T (1985) 16 ATR 246, 85 ATC 4104, in which a taxpayer was not entitled to a deduction for five years' prepaid interest because it represented a 'capital' item, and a similar decision by the Supreme Court of Queensland in the Oakey Abattoir Pty Ltd vs FC of T (84 ATC 4407; (1984) 15 ATR 680).

Two other court decisions are of relevance to this discussion and the results should be contrasted with the decisions in Creer versus FC of T and the Oakey Abattoir Pty Ltd versus FC of T. These are (i) the Supreme Court of New South Wales' decisions in 1981 on Alliance Holdings Ltd vs FC of T (81 ATC 4637; 12 ATR 509), and (ii) Australian Guarantee Corporation Ltd vs FC of T (84 ATC 4024;15 ATR 53). In both cases, the companies borrowed money from the public by issuing deferred interest debentures in which principal and interest were to be paid at maturity. The courts ruled that a deduction was allowable to both companies under section 51(1) of the Income Tax Act in respect of each year as the interest on the debentures accrued. In both these cases, the courts were satisfied that there was in each relevant year, a present liability to pay the determined interest at a future date. The courts were therefore allowing the taxpayer to use the accruals basis for calculating interest expense for each year.

The number of decisions in case law highlight the somewhat contradictory and piecemeal nature of these decisions with the focus very much on issues and concepts that have little to do with the actual meaning of income and wealth. There is little recognition given to the realisation that issues arising from such cases cannot be treated in isolation but must be dealt jointly with a fundamental reappraisal of the central issue of methodology for determining economic income. The decision of the High Court in the Coles Myer case for instance, validates this view. Once this is done, then considerations such as cash flows being of a 'capital' or 'revenue' nature, or being discount or interest income, become irrelevant. Consequently, a rigorous treatment of income and wealth concepts is deferred to Chapter Three. It is a review of methodologies that are currently in use or proposed that are examined next.

1.2 (c): 'Due and receivable' vs 'Daily Accruals' vs 'Mark to market':

The number of alternative rules currently in use or proposed to measure income, is evidence of the gap that currently exists between the various participants to this debate on the meaning of what constitutes economic income. The differences between the alternative methodologies reflects the very problems that are encountered in defining economic income. There are two main alternative rules currently used or proposed to assess taxable income. These are (i) the 'due and receivable' in which actual receipts and payments are recognised as income in the period they are realised. (ii) The 'accruals' which attempts to spread receipts/ payments in a manner that reflects their true economic meaning. The 'accruals' basis itself, can take a number of forms. Currently, the following 'accruals' methods are in use or proposed: (a) The 'daily straight line' accruals, used currently to measure income on interest rate swaps in Australia under Income Tax Ruling IT2682. Under this method, actual receipts/payments are

apportioned on a daily straight line basis over each relevant calculation period, this being over the term in which the receipt/payment is due. (b) The 'daily compounding' accruals basis, under which actual receipts and payments are apportioned on a daily compounding basis. This method is better placed to assess income from sets of non-uniform cash flows and is currently used for assessing income from bond instruments in Australia, under Division 16E of the Income Tax assessment Act. The pricing of bonds is such that any differences between fixed coupon and yield rates is reflected and adjusted in the price of the bond. This component is then accrued on a daily compounding basis to maturity. The 'daily compounding' accruals however is not used to assess income from other compounding instruments under current Australian tax laws. Examples of such instruments with similar cash flow characteristics include, bills of exchange, forwards and futures contracts and accelerated and deferred payment swaps. (c) The final accruals basis to be considered is the 'mark to market'. It attempts to bring to account changes in market value of cash flows. This is reflected by changes in the net present value of future cash flows and includes both realised income assessed under the due and receivable basis, and unrealised gains and losses.

The differences between the alternative rules are substantial and often irreconcilable. The due and receivable and the straight line and compounding accruals assess income resulting from actual events already past, and therefore measure 'realised' income. Mark to market income on the other hand, results from both past events and expectations on future events, the latter being based on the set of implied forward rates generated from current term structures. More formally, the implied forward rates are unbiased estimators of future conditions and events which are relevant to income production from financial instruments. Methods based on income realisation such as the due and receivable, imply market incompleteness and their justification appears to be based on little more the simplicity of the concept. While 'simplicity' as a criteria should not be underestimated, the opportunities such methods provide for an intertemporal rearranging of cash flows to minimize tax, means that other more important criteria such as 'efficiency' and 'neutrality' are overlooked. Examples of such instances are documented in Chapter Two. These methods also appear to be popular due to the widely held belief that rules such as the mark to market inject considerable volatility to the measurement of income coming from the unrealised component of income. The measurement of such volatility is often seen to be undesirable on the grounds that it may lead to an unnecessary cash flow burden on the smaller taxpayers. These arguments are sympathetic to the ability of taxpayers to pay, but ignore the critical question regarding the overall economic purpose and objective of financial instruments.

The academic literature has had very little to directly say on the merits of the various rules to assess income. Much of the work in academia has focused on the relative information content of earnings, measured by the various realisation based methods, on share prices. Most notable in this regard are the works of Rayburn (1986), Wilson (1986, 1987) and Bierman (1988). Kwon (1989) has also looked at the information content of accruals and the due and receivable approaches, but his purpose has been highlight the relative merits of each method when it comes to reflecting the

effects of managerial actions. Bowden (1993) also examined the appropriateness or otherwise, of the various alternative rules to assess income and their impact on managerial effort.

Rayburn, Bierman and Wilson, independantly found that capital market participants appear to react to the accrual instead of the cash flow components of reported accounting earnings. Such a finding may imply the accruals method to be superior to the due and receivable method. However, the authors acknowledged that other sources of information such as the financial press and analysts' forcasts, to which financial market participants react to, could complicate their findings. Kwon attempted to approach the debate by comparing the accruals and the cash based-methods in a simple agency setting with moral hazard. He attempted to show that in a theoretical agency setting with moral hazard, the accruals approach was superior to cash-based methods in that the former more fully reflected the overall effects of managerial actions or efforts on future cash flows than cash flow realisation methods in any given period, even though accrual accounting may, in some instances require a subjective assessment on the future effects of events and therefore be subject to management manipulation.

Kwon's two-period agency model consisted of a principal (owner of the firm) and his agent (the manager). The principal's problem was to structure the agent's compensation package for both periods in a way that provided the agent incentives to expend effort and share risks in an optimal fashion. The critical point was the accounting information system to be adopted because the agent's compensation package was to be based on the information signals being disseminated by the chosen accounting system. Kwon then derived the optimal compensation package for the agent under both the cash-based and the accruals accounting systems and found that agency welfare, as defined by the principal's utility function, was higher under the accruals instead of the cash-based system. He found that the accruals-based system dominated the cash-based system whenever accruals were informative about the agent's effort. The result was essentially an extension of the Holmstrom (1979) one-period model in which it was showed that agency welfare could be increased by a signal if and only if the signal was informative about the agent's effort.

Kwon acknowledged that his analysis and conclusions were limited in the absence of a capital market because in a capital market, the agent could rearrange his or her compensation package by borrowing or saving. Furthermore, capital markets also emit signals on a firm's performance and therefore implicitly on managerial actions, thereby complicating the analysis. Bowden (1993) also constructed a 2-period model but in which 'effort' the real economic variable, determined output and the scale of financing required for the project.In the model, the total financing requirement for a project is given, but the agent could adjust the given fixed cash flows intertemporally, by entering into an interest rate swap contract. He could do this for instance, by making a lump-sum interest payment on the swap. There were two sources of uncertainty introduced to the model, i.e. random production earnings and stochastic interest rates. It was within this framework that the appropriateness of the various alternative

taxation rules were assessed in their impact on the agent's effort. The study showed that under production earnings and interest rate certainty (ie. the agent knows in Period 0, the outcome for both variables), the due and receivable regime resulted in (i) planned equalization of net receipts between the two periods, with the sole object of minimizing the discounted tax burden. (ii) Possible borrowing on personal account to finance the equalization. (iii) Separability of production and taxation decisions, in particular, real production decisions were not affected by the decision on whether to swap or not.

If earnings uncertainty were introduced, then the separability of production and tax decisions was no longer valid. In such instances, the due and receivable basis increased risk taking because the producer was better able to share risk with taxation authorities in a manner pointed out by the classical studies on taxation and risk bearing (refer Stiglitz (1969), Mossin (1968) and Ahsan (1976)). Adding interest rate uncertainty to the analysis, reduced optimal effort. Once the swap was introduced and interest rate uncertainty eliminated, the due and receivable assessability enabled the agent to intertemporally rearrange his cash flows to lessen his overall tax burden. However, uncertainty with respect to production income itself, led to an increased sharing of risks by tax authorities, diminishing the agent's marginal utility for extra income and risk aversion, leading to extra effort and output relative to the no-swap case. Under an accruals regime with earnings and interest rate certainty, attempts to shift income intertemporally resulted in significantly higher tax yield while its adverse effects on real output, relative to the due and receivable regime, were not found to be substantial. Therefore, Bowden concluded that an accruals regime was more 'efficient' to a cash-based method such as due and receivable.

The theoretical work therefore, points towards the adoption and implementation of an accruals based regime to assess taxable income. The studies fall short however, of suggesting an optimal accruals methodology for assessing income from financial instruments. The papers studied so far are relevant because they are concerned with developing appropriate performance measurement rules for managers. These measures are designed to reward performance on the basis of economic gains made by managerial actions. To do this, an appropriate methodology is required to identify and measure such gains. However, the development of performance measurement rules, and their relevance to guide the development of taxation rules while important considerations, should not lead to deviations from the objective of meeting the set of criteria facing taxation policy makers. Because although the development of true performance measurement rules for managers and rules to assess income for the accounting profession require consideration of identical problems, the criteria that they individually face may be quite different. For instance, accountants are required to assess income on a 'true and fair' basis, whereas taxation policy must contend with meeting criteria such as 'efficiency', 'neutrality' and 'simplicity'. Once such criteria are properly defined, as they will be later on in this Chapter, it then becomes possible to even take a preliminary look at the appropriateness of some of the accruals rules without having to conduct the sort of in-depth analysis to be found in Chapters Three and Four. For instance, the implementation of the 'straight line' or

'compounding' accruals means a huge compliance task of unbundling portfolio cash flows into their original single instruments to calculate Internal Rates of Return (IRR). Only once the individual IRRs are calculated, can it then be possible to derive actual receipts and payments to be accrued. Consequently, the implementation of such rules can be both costly and complicated and may therefore be rejected because of failure to meet the 'simplicity' criteria.

1.2 (d): 'Hedging' versus 'Trading':

This is perhaps the most contentious of all areas because of the preoccupation of the professional literature to define such terms in a manner that attempts to segregate all transactions into either of the two catagories. Unfortunately, the more determined the literature appears to be in this pursuit, the less successful it seems to be in terms of results. The starting point for the professional literature has been to translate the percieved neatness of fit of the historical cost versus market value distinction to 'hedging' and 'trading' transactions respectively. A variety of American literature has been presented on the subject matter. For instance, refer to Hauworth and Moody (Jan. 1987), Stewart (Nov. 1989), Herdman (July 1985), Wishon and Chevalier (Sept. 1985), Stewart and Neuhausan (Aug. 1986), Bindon and Schnee (Sept. 1986), Foran and Ramanathan (Jan. 1975), Munter, Clancy and Moores (Mar. 1985), Adams (June 1984), Jones (Aug. 1988), Boze (1990) and Bierman (1987). Australian material on the same subject can be found in Exposure Draft 59 (ED59) Proposed AASB Accounting Standard published in March 1993 and Income Tax ruling IT 2228 issued in December 1985 on Futures Transactions.

The Financial Accounting Standards Board (FASB) USA, in SFAS 80, 'Accounting For Futures Contracts', issued in August 1984, lists two criteria that financial instruments must meet to qualify as a 'hedge'. These are (i) The item to be hedged must expose the firm to price or interest rate/currency risk. (ii) The instrument used to hedge must reduce the firm's exposure to that risk. The Australian ED59 imposes further restrictions on the definition of a 'hedge' instrument. In addition to (i) and (ii), ED59 requires (iii) a high degree of correlation between changes in net market value of the instrument and the position being offset, so that the instrument in question, is seen to be effective as a 'hedge'; and (iv) the financial instrument is designated in the accounting records as a 'hedge'. ED59 defines 'trading' transactions as those that fail to qualify under the category of investing, financing or hedging transactions.

The professional literature's attempts in classifying transactions on this basis, has been spectacularly unsuccessful because most financial transactions appear to fall somewhere between the two definitions. Even where there may be a clear intention initially, on the purpose of the transaction, it is possible to change that intent anytime thereafter at the preference of its users. If the criteria for choosing tax rules to assess income is based purely on the motive behind the transaction, as is being

currently proposed in most countries, users of financial instruments will

have distinct incentives to classify financial transactions in a manner that gives them the most favourable tax outcome. While detailed examples of such transactions are presented in Chapter Two some general examples that highlight particular conceptual and practical problems are presented next. The most common example given of a 'hedged' transaction is that of a corporate borrower converting his floating rate borrowings into fixed rate borrowings by entering into an interest rate swap contract. This is deemed to be a transaction in which the corporate treasurer is 'hedging' his liabilty. The corporate borrows funds in the capital markets to facilitate its production/consumption opportunities and by entering into the swap contract, seeks to reduce its exposure to interest rate risk. The function of the interest rate swap contract however, is only to convert a series of future floating rate (uncertain) cash flows into fixed (certain) cash flows, thereby enabling the corporate to lengthen its liability portfolio duration in accordance with its view on future movements in interest rates. The motive behind this transaction could be either speculative or to reduce earnings volatility. The creation of categories such as 'hedging' and 'trading' however, fail to resolve the problem of independantly verifying the original motive for the transaction.

An equally strong but opposing example, is the case of a derivatives trader for a bank, who enters into transactions to generate trading income. Under current proposals put forward in Australia and overseas, if accepted, then the trader's income would be assessed on the mark to market basis. In his role as a trader, he prices and warehouses cash flow positions to capture gains from future movements in the term structures. In so doing, the trader, from time to time, may choose to diversify his price risk (ie. hedge) with cash flows from other financial instruments. The problem posed here is in deciding whether the instruments used in diversifying away the portfolio's price risk are part of his overall trading portfolio or whether such instruments should be classified as 'hedges' and any income from these be assessed using different measurement rules.

Defining terms such as 'hedging' and 'trading' create more problems than they solve.For instance, the term 'hedge' has been broadly defined with the purpose of capturing the range of transactions that are possible in this category. Yet, the term has also been defined to exclude instruments which do not have high levels of covariance with the underlying transaction. This raises serious problems concerning cross- hedges and other instruments which may have varying degrees of covariance with the underlying portfolio and where the decision to use particular instruments is based on both 'trading' and 'hedging' considerations. In the absence of benchmarks on the appropriate degree of covariance between instruments to decide whether transactions should be regarded as 'hedge' or 'trade', the choice becomes arbitrary and at the discretion of the user. Such definitions therefore, only draw attention away from the real economic function of financial instruments. The crucial step therefore is to identify the real economic function of financial instruments in a particular transaction because once that is determined, then issues such as identifying economic income from financial instruments becomes the next logical step. Utility maximizing investors with existing portfolio cash flows, choose to invest in those instruments that maximize portfolio expected returns for a given portfolio

variance. The economic objective of investors is to maximize expected utility by reaching the portfolio mean-variance efficient frontier. This may result in investors choosing instruments with varying levels of covariance with existing portfolio cash flows to reach the utility maximizing point on the efficient frontier. This lends itself to the result in modern portfolio theory that the portfolios of all risk-averse investors consist of essentially different combinations of the risk-free asset and a portfolio of risky assets. At the very least, this result removes the need to impose definitions such as 'hedging' and 'trading' on current debate, because all instrument cash flows have risk-free and risky characteristics depending on the extent of covariance with an investor's existing portfolio of cash flows. It also correctly draws attention to the inappropriateness of imposing terms such as 'hedging' or 'trading' on instruments in isolation. Instead, it is the overall effect of an instrument on an investor's existing portfolio, as unclear as that may be, that is of relevance when attempting to define such transactions. Finally, it reduces the problem of methodology for identifying economic income to one of determining the relative combination of risk-free and risky cash flows in a portfolio and then identifying income from those flows.

1.2 (e): 'Neutrality' , 'Efficiency' and 'Simplicity':

'Neutrality', 'efficiency' and 'simplicity' are criteria that have been widely used when discussing public finance issues in the area of taxation policy. The lack of discussion on the relevance of such criteria to this debate however, is therefore surprising and should be of considerable concern. This is because in the absence of any guide- lines for what is 'correct' or 'wrong' tax policy, criteria such as these become the only tools by which to judge tax policy.It is therefore of significant importance that these criteria are appropriately defined in the context of this discussion. Over the years, these criteria have come to mean a number of things depending on the subject matter. Musgrave and Musgrave (1980) for instance, require an 'efficient' and 'neutral' tax rule to be one that minimally interferes with economic decision making in otherwise efficient markets. More recently, and with similar emphasis, Bowden (1993) defines 'efficiency' in terms of (i) the tax yield for a given rule, and (ii) the effects of the rule on the allocation of real effort (labour inputs, physical investments etc.). A tax regime is considered more 'efficient' than another if it Pareto dominates according to (i) and (ii) ie. it can raise more tax revenue while preserving at least as much real effort. To define such terms in the context of this debate however, requires consideration of the fundamental issue of what distinguishes one investor's set of cash flows from another. The degree of risk associated with cash flows, as determined by portfolio variance, is what makes each set of cash flows unique.Consequently, an 'efficient' tax rule can be defined as one which maximizes the tax yield for a given rule without unduly discouraging or penalising risk taking behaviour by market participants. 'Neutrality' on the other hand is defined, in the sense that a taxation rule cannot discriminate between cash flows that are primarily of the same economic nature, despite their being labelled or repackaged differently, or used for different purposes. This refers to the possibility of creating the same set of cash flows by means of different instruments (forwards versus swaps, as a common

example), or the same set of instruments but used for different purposes such as speculation or hedging, at the preference of the user. It also means that a taxation rule cannot create incentives for market participants to actively avoid taxation by intertemporal rearrangements of cash flows. 'Simplicity' in a tax rule means that it must be easy to understand and compliance costs on the part of taxpayers and costs incurred by the relevant tax authorities in imposing the tax rule must be minimal. Although this is perhaps the least important of the three criteria, its function is to emphasise the development of tax rules to assess portfolio income instead of rules such as the 'straight line' and 'compounding' accruals, that require a breakdown of portfolio cash flows into their single instrument transactions thereby creating huge compliance costs for taxpayers.

1.3 FINANCIAL INSTRUMENTS AND TAXATION LEGISLATION: A SURVEY OF COMPARABLE COUNTRIES:

With key definitions and concepts examined, it is now appropriate to examine the extent to which current debate and discussion have been formalized in legislation in Australia and other comparable countries. The other countries chosen for study are the USA, the UK and New Zealand, primarily because of the similarity of economic circumstances as well as a similarity in levels of development of financial markets technology and the conceptual and practical problems that go with the development in finding an appropriate framework to assess economic income.

1.3 (a): US Tax Legislation:

The US tax legislation in relation to financial instruments has many rules and regulations which tend to be extremely detailed in their operation. One of the more important developments in the US has been the publication of draft regulations by the Internal Revenue Service in July 1991 dealing with the timing of recognition from 'notional principal contracts' such as interest rate swaps, option contracts and other derivatives. At the time of writing this Chapter, I was unable to confirm whether the draft rules have been fully implemented. In very broad terms, the proposed regulations specified a number of timing methods to reflect the 'true economic substance' of notional principal contracts. Critics on the regulations (Frost, May 1993, in 'Taxation of Financial Transactions' paper by Group Taxation Department, Westpac Banking Corporation) point out that as far as can be seen, the proposed US regulations have still not clarified the capital/revenue distinction, which is particularly surprising, especially in light of the chaotic US case law on the treatment of 'hedging' transactions and in particular, the Supreme Court decision in Arkansas Best vs Commissioner, 485 U.S. 212 (1988).

A more recent development has been a proposal contained in Section 203 of the High Value Economic Growth Bill (1993) which requires dealers and traders in financial instruments to use the mark to market basis to assess taxable income. Before this bill, dealers had a choice of using the cost (cash based or straight line accruals), or lower of cost or the mark to market basis. It is now believed that the

mark to market basis more accurately reflects the economic income derived from trading. It appears that dealers and traders in notional principal contracts will be subject to these rules instead of the proposed draft regulations proposed by the Internal Revenue Service in July 1991, described earlier.

Other taxation regulations include rules for providing the decomposition of compound financial instruments into basic elements and the possibility of certain hedging transactions to be 'integrated' and taxed with the underlying transaction. Foreign exchange gains/losses are dealt with under a number of provisions and can be taxed either on a realisation basis or on a mark to market basis, depending on the circumstances. Holders of deep discounted bonds, such as zero-coupon bonds, are required to amortise the discount amount into income over the life of the bond using daily compounding accruals, similar to that used for Australian deep discounted bonds, under Div. 16E of the Australian Income Tax Assessment Act (1992).

1.3 (b): UK Tax Legislation:

The United Kingdom released two Consultative Documents on the taxation of financial transactions. The first was a Consultative Document in August 1991 on 'The Tax Treatment of Financial Instruments for Managing Interest Rate Risk'. Financial instruments covered by this Draft included swap transactions and other single and multi-period notional instruments that involved payment of interest to be determined by reference to the application of an interest rate to a notional principal amount. Equity and commodity-linked instruments were excluded as were, surprisingly, primary debt instruments such as loans and government bonds as well as bond futures and options. The objectives of the proposals put forward in the Draft are listed as: (i) To include as many notional instruments as possible that are used for managing interest rate risk, with the significant exceptions already outlined. (ii) Assimilation to income, so that all payments would be allowed as deductions against profits and all receipts would be taxed as income, thereby removing the revenue/capital distinction still embodied in US tax laws. (iii) Rules governing timing (ie. when payments and receipts would be recognised for tax) should follow ordinary commercial accounting principles. Thus the Consultative Document states that 'In general, companies would account for instruments for tax using the method used in preparing their accounts. This would give companies considerable flexibility or freedom of choice'. (iv) Specific anti-avoidance measures to protect the Exchequer against loss.

The second Consultative Document related to the treatment of foreign exchange gains and losses for tax purposes and was published in March 1991 following the 1984 court decision in Pattison versus Marine Midland 57 TC 219; (1984) AC 362. Following that Consultative Document a further draft legislation was released in February 1993 in the form of another Consultative Document. The draft code sought to bring unrealised foreign exchange gains and losses to account for tax purposes. However, where unrealised exchange gains on long-term 'capital' items exceeded 10% of the profit of an accounting period, the

excess could be deferred until the following accounting period. For 'hedging' transactions on capital account where companies matched the foreign currency exposure of non-monetary assets with financial instruments, the draft regulations allowed companies to match the exposures against each other in determining when exchange gains and losses on the financial instrument were to be taken into account.

1.3 (c): New Zealand Tax Legislation:

New Zealand has taken the lead in the development of a comprehensive taxation legislation for financial instruments. The legislation was primarily driven by anti-avoidance considerations and a Consultative Document was released in late 1986. After receipt of submissions, draft legislation was introduced in December 1986 and the original provisions of the regime were enacted in March 1987. Since then, there have been endless legislative amendments and Consultative Committees to cope with the difficulties of the enacted legislation.

The New Zealand regime now uses a variety of methods to spread/recognise income and expense including the yield to maturity, straight line accruals and the mark to market. The straight line accruals method has only been introduced in the 1991 ammendments to legislation and covers a narrow range of transactions. Under current rules, a taxpayer is required to use a given recognition method for all transactions. Therefore, if a bank uses the mark to market rule to assess income from 'trading' financial instruments for example, then it would also be required to use the same recognition method for its 'hedging' transactions. It is understood that New Zealand may move in due course to a system where either of the three methods can be used by by the taxpayer, depending upon the circumstances of the transaction. Current legislation also recognises unrealised foreign exchange gains and losses for tax purposes. The current complexities in New Zealand legislation revolve around the 'yield to maturity' rule. The adoption of this has led to a tremendous amount of work by all parties to unbundle portfolio cash flows into their individual instruments to enable calculation of individual 'yield to maturities'.

1.3 (d): Australian Tax Legislation:

Financial instrument transactions are generally treated on revenue account and therefore attract the ordinary assessing provisions Sections 25 and 51 of the Income Tax Assessment Act 1936. The only exception is where a particular asset or liability is shown as a 'hedged' on capital account. Examples of such transactions have been given in earlier sections of this Chapter. In such cases, Division 3B and the capital gains tax provisions apply.

Australian tax legislation recognises and implements the cash based due and receivable, daily straight line and compounding accruals rules to assess income. A significant development in Australian tax laws on financial instruments has been the drafting and implementation of Income Tax Ruling 2682 in May 1992, on the timing of interest rate swap receipts and payments on a daily straight line accruals basis.The ruling utilizes this

method for all users of interest rate swaps irrespective of the purpose for which the swaps are used for. The Ruling does not cover swaps with accelerated or deferred payments and receipts. These are still recognised on the due and receivable basis. Division 16E of the Income Tax Assessment Act contains legislation on long-dated bonds. It recognises the use of a semi-annual compounding accruals basis to assess taxable income from bonds. The concept is similar to the 'yield to maturity' concept used in New Zealand. Both concepts require, in the first instance, the Internal Rate of Return (IRR) on the bond, on which to accrue the actual receipts and payments on a compounding basis. The method is inappropriate in assessing portfolio income because of the possibility of deriving more than one IRR for a set of portfolio cash flows. Taxation Ruling 93/21 covers short-dated discounted securities with a maturity of less than twelve months, extending across two income years. Under this Ruling, income is assessable under Section 51(1) of the Income Tax Assessment Act on a daily straight line accruals basis. Cross curency receipts and payments are subject to the daily straight line accruals provisions of IT2682 although the possible currency gain or loss on re-exchange of principal at maturity of the contract, is recognised on actual realisation of the gain or loss. Forward foreign exchange contracts are viewed primarily as foreign exchange contracts although their pricing reflects relative interest rate differentials between two currencies. Gains and losses on such contracts are treated as foreign exchange gains and losses and are assessable as income under Sections 25 and 51 on maturity of the contract. Gains and losses on short dated discounted notional instruments such as Forward Rate Agreement are also assessable as income on maturity of the contract while short-dated discounted cash instruments such as bills of exchange, which exhibit similar characteristics to Forward Rate Agreements are assessable on the daily straight line accruals basis for tax accounting purposes, based on the High Court decision in the Coles Myer case. Option contracts have been the subject of Taxation Determination 93/D62 released in March 1993. In it, the fees or premium are assessable as income on a due and and receivable basis. Any gains or losses made on the exercise of the option contracts, are also assessable as income on a due and receivable basis. Finally, the gains or losses on exchange traded futures contracts are recognised at the time of sale of the contracts also on a realisation basis.

A further Consultative Document titled 'Taxation of Financial Arrangements' was produced by the Australian Tax Office in December 1993 to examine legislation in relation to other financial instruments and possible amendments to IT2682. The document has been effective in accelerating the debate on this issue amongst the various industry groups and hence the timing of this study is appropriate. To date, the Australian Tax Office is still in the process of consultation with various industry groups to achieve its aim of completely overhauling tax legislation in this area. The Document proposes the following changes; (i) The basic method to bring income to account for tax purposes will be the daily compounding accruals approach. (ii) Straight line accruals and mark to market accounting will be used in a limited number of cases where the compounding method cannot be used. (iii) Where market value accounting is not required, taxpayers will have the option of using it under conditions which require consistency of treatment and where obtaining estimates of market value are difficult. (iv) The due and receivable method will not be available for use. (v) If a financial

instrument is said to be 'hedging' another position the tax treatment of the financial instrument will not be affected by the tax treatment of the 'hedged' position. This is an implicit recognition by Australian Tax Office of the difficulties in trying to identify the 'hedging' or 'trading' characteristics of transactions. This method however, runs the very real risk of producing some after-tax results which are completely at odds with the original purpose of transactions.

Financial transactions will, if the proposals in the Document are adopted, be categorised in the following groups; (i) Fixed return debt instruments. These include bonds (from zero-coupon to par bonds) and will be subject to the daily compounding accruals method. (ii) Variable return debt instruments. These will also be subject to the same assessment as fixed rate instruments, except that because their cash flows cannot be known in advance, adjustments will be made each year to take account of the differences between actual and expected gains and losses. This implies some form of mark to market assessment to derive expected gains or losses, although the method used to spread any differences between expected and actual gains and losses, will be the compounding accruals. (iii) Foreign exchange gains and losses will be assessed on the same basis as variable return instruments. This is to prevent gains and losses from being assessed on the due and receivable basis or use the 'retranslation at balance date' approach which can result in large swings in income. (iv) Interest rate and currency swaps will be assessed on the basis that they are servicing a loan and will still be subject to IT2682. (v) Instruments such as futures, and forwards will be marked to market because it is felt that they generate insufficient cash flows on which to base a daily compounding accruals. (vi) Market value accounting is also proposed for option contracts on all types of debt instruments.

Both the current legislation and the proposed Document retain many of the concepts and definitions that have been shown to impede the development of appropriate rules to identify economic income. This is in part, a reflection of the legislators lack of understanding of financial instruments and their economic function. Apart from the significant compliance costs taxpayers face in adopting the straight line and compounding accruals rules, their tasks will be made no less tedious, by the great many number of alternative tax rules still in use to assess income from the variety of financial instruments currently available. This will also prove to be to the detriment of the Australian Tax Office because of the incentives such rules give to structure financial transactions in ways to minimize tax. Examples of such instances are shown in detail in Chapter Two.

1.4 CONCLUSIONS:

The purpose of the literature survey has been to introduce readers to the extent and direction of the discussion, which until now at least, appears to be dominated by the professional literature and case law. The proof is seen in the embodiment of various concepts and definitions taken from these areas to be put into legislation both

in Australia and overseas. This piecemeal approach and the often irreconcilable decisions produced by case law, have not only proved unsuccessful in addressing the question of identifying economic income, but have only added to more uncertainty in a market that is still continuously evolving. Very often, the decisions in case law have been based on 'precedents' taken from cases which have very little to do with the actual issues being examined here. This has led to the retention of definitions such as 'capital' and 'revenue', 'hedging' versus 'trading', which now underpin current legislation, because of the ease with which they take legal form, but which produce results that, very often, depart radically from the real economic substance of transactions.
In conducting the literature survey, this Chapter has attempted to shift the focus to a need to revisit key concepts in finance theory and to discard many of the burdensome definitions produced by case law and the professional literature. Chapter Two shows some selected examples of transactions where 'legal form' produces results which are radically different to the 'economic substance' of transactions. These examples will show the often very different taxation treatment of the same set of cash flows replicated by different financial instruments.

CHAPTER 2

CASE STUDIES

2.1 INTRODUCTION:

The present chapter constructs a detailed set of examples, in the form of informal case studies, that can be used as an aide to the understanding of the problems in tax law and practice outlined in the previous Chapter. The examples are drawn from instruments such as interest rate swaps, cross currency swaps, foreign exchange forwards, futures, other discount instruments and options.

The case studies are divided into four main sections. Sections 2.2 and 2.3 examine the treatment of short-dated and long-dated instruments respectively, under current Australian tax laws. The examples point up the difficulties with current tax laws in identifying economic income from cash flows that yield similar payoffs but differ only in their labelling. Section 2.4 examines the capital versus revenue distinction and its relevance to current financial markets. Section 2.5 assesses income from an interest rate swap portfolio under the due and receivable, the straight line accruals and the mark to market rule. Its purpose is to introduce the methodology behind each of the three alternative rules as well as to look at the extent to which different rules produce different assessments. This might lead to an appreciation of the possible implications of having more than one rule to assess income.

CASE STUDIES:

2.2 : Investment alternatives, pre and post tax: An analysis of short - dated notional and cash instruments:

This section looks at the assessment of income from instruments such as bills of exchange, short-dated interest rate futures, forward rate agreements and short-dated interest rate option agreements such as caps, floors, etc. These instruments are pure interest rate products generating one-period cash flows, designed to manage interest rate risk and/or outright position taking. The cash flows generated and their treatment under current Australian tax laws are illustrated.

EXAMPLE A:

Assume that an investor considers the following identical investment alternatives on 30 January 1994; (i) Buying a forward three-month bill of exchange with settlement on June 8 1994, and maturing on September 7, 1994, currently yielding 10.00% p.a. (ii) Buying an exchange

traded bank bill futures contract, with a settlement date of June 8 1994, and a maturity date of Sept.7 1994, priced at 90.00 (ie. an implied yield of 10.0% p.a.). (iii) Buying a three-monthly Forward Rate Agreement (FRA) with settlement date June 8 1994, and maturing on September 7 1994, and also yielding 10.00% p.a.

It is assumed that on June 8 1994, the three month spot bank bill rate is 20.0% per annum. This means that under alternative (i), the investor borrows three month funds at 20.0% p.a. to purchase the bill. Under alternative (ii) he sells the futures contract on settlement date at a price of 80.00 implying a yield of 20.0% p.a., and under alternative (iii) there is a cash settlement on the FRA representing the difference between the original purchase yield and the spot yield rate. It is assumed that all three contracts have equal face value of $500,000 and the tax financial year ends June 30 of each year. The cash flows generated under the three alternatives as at January 30 1994, are in TABLE 2.2 (A) (APPENDIX ONE). Although futures and FRA instruments are notional principal contracts whereas the bill of exchange contract an actual physical instrument, this does not affect the resulting cash flows or analysis.

TABLE 2.2 (A) in Appendix One illustrates the notional/actual cash flows on the three instruments. In all three cases, the face value of the instruments is known at the outset and is due at maturity on 9 September 1994. The amounts determined for due date 8 June 1994 represent the disounted net proceeds of the original face value at the original buying yield of 10%, or more formally,

$$\text{Net Proceeds} = \frac{\text{Face Value}}{1 + \left(\frac{\text{Buying Yield}}{100} * \frac{\text{No. of days b/w 8/6/94 \& 7/9/94}}{365}\right)} \quad (1)$$

On June 8 1994, under alternative (i), the investor borrows $ 487,837 for three months to purchase the bill of exchange at 20.0% p.a. He pays back $512,162 on September 7 1994 on the borrowing, thereby incurring a cash flow deficit of $12,162 on September 7 1994. The amount to be repaid at maturity is determined in the following manner,

$$\text{Amount at maturity} = \$487{,}837 * \left(1 + \frac{\text{borrowing yield}}{100} * \frac{\text{No. of days b/w 8/6/94 \& 7/9/94}}{365}\right) \quad (2)$$

Under alternatives (ii) and (iii), the investor incurs a cash flow deficit on settlement of the Futures and the FRA contracts on June 8 1994. This is calculated as the difference in discounted net proceeds calculated at the buying and borrowing yields using (1), and is $11,584 in the case for both the FRA and Futures contracts. Although the nature of the cash flows and economic income from all three contracts is similar, the tax outcome is vastly different, depending on the investment alternative pursued. Under current tax laws, the net cash flow deficit in alternative (i) is spread over the life of the contract on a daily straight line accruals basis. This follows the decision of the High Court in the Coles Myer case. Therefore, the investor is only entitled to claim a loss of:

$$\frac{\text{No. of days b/w 30/6/94 and 8/6/94}}{\text{No. of days b/w 7/9/94 and 8/6/94}} * \$12,162 = \$2,940.$$

in the 1994 tax financial year, and the remainder in the 1995 tax financial year. Under alternative (ii) in which the futures contract is sold at a loss of $11,584 on June 8 1994, the investor is entitled to an immediate deduction for the entire amount in the 1994 tax financial year. Under alternative (iii), the investor incurs a cash flow deficit of $11,584 on settlement of the FRA on June 8 1994. This is assessable as income at maturity of the contract on September 7 1994, and therefore the investor is only entitled to claim the loss in the 1995 tax financial year. This particular example shows a vastly different tax outcome under current Australian tax laws for three instruments generating similar cash flows and with a similar economic purpose but under different labels.

EXAMPLE B:

A second example relating to short-dated instruments is one where the investor considers: (i) Buying a spot six-monthly bill of exchange, or (ii) buying deep 'in the money' six monthly bank bill options in which the investor is required to pay a premium immediately, to exercise the options in six months time.

The date of purchase for both contracts is March 9 1994 to mature/exercise on September 9 1994. The bill of exchange has a face value of $500,000. Under alternative (i), the investor purchases the bill of exchange at a yield to maturity of 10.0% p.a. He receives $476,253 in net procceds on March 9 1994, and pays back $500,000 on September 9 1994. Under alternative (ii), the investor buys 211 9.0% 'deep in the money' bank bill call options which have a current intrinsic value of 100 basis points. The premium on the options is due on 9 March 1994, and is derived using (1) to calculate the difference between the net proceeds on bank bills at the buying (10%) and selling (9%) yields. Cash flows under both alternatives are summarised in Table 2.2 (B) in Appendix One.

Again, we evaluate the impact of current tax laws on each alternative. In the absence of external funding costs and the tax

financial year ending June 30 of each year, under alternative (i), the discount income, represented by the difference between discounted net proceeds and face value of the bill, will be subject to the daily straight line accruals. Therefore, the investor will be assessed on $23,747 on a daily straight line accruals to maturity of the contract. He would be entitled to claim $14,744 in the June 1994 financial year and $9003 in the 1995 financial year (this is reflective of the number of days between the spot date of the transaction and June 30 1994, and the maturity date and June 30 1994, respectively). Under alternative (ii), the investor is entitled to claim a full deduction for $476,227 in premiums paid, in the 1994 financial year, and is assessed on the full $500,000 gain made on exercise, in the 1995 financial year.

The purpose of these rather simple examples, has been to highlight the differential tax treatment of cash flows with essentially similar payoffs. The presence of such non-neutralities here has more to to do with case law and its preoccupation with product definitions, while ignoring the more relevant issues of cash flows and economic income from such instruments. Example B also demonstrates problems associated with the capital versus revenue distinction because the cash flows representing option premium and gains made on exercise, are treated on revenue account and hence fully assessable as income in Column B, while similar cash flows in Column A, result in being treated as items of capital in the form of discounted net proceeds and face value of the bank bill.

The taxation treatment of options generally, is fraught with difficulties. The most significant is the issue of what an option contract actually represents. The value of an options contract in an efficient market is replicated by purchasing or selling a certain proportion of the underlying instrument, and continually adjusting the holding of such instrument as the underlying parameters relevant to the value of the option change. The proportion of the underlying instrument to be held is determined by the option 'delta' and, in theory, buyers and sellers of the option could enter into this replicating strategy instead, and continually adjust their holding of the underlying instrument with changes in the option 'delta'. This concept not only forms the basis of the Black-Scholes Options Pricing Model, but is a basic premise on which rests the theory of option portfolio 'hedging'.

This creates immediate problems from the point of view of assessing taxable income from option contracts. Under current Australian tax law with Taxation Draft Determination 93/D62 in particular, premiums paid or received on option contracts are assessable under Sections 25 and 51 of the Income Tax Assessment Act on a due and receivable basis. The gain or loss on exercise of the option is recognised on exercise and is also on a due and receivable basis. However, with the number of alternative rules currently in use to assess income on the underlying instruments, option traders would face considerable uncertainties and distortions in determining their post-tax economic outcome. This arises not only because of the different possible rules used in the assessment of taxable income from option contracts on the one hand and their corresponding underlying instruments on the other, but also from the difficulties faced in determining what due and receivable actually means when assessing gains or losses on exercise of the option. For short-dated options on

instruments such as bills of exchange and FRAs, actual gains and losses are reflected fully under the due and receivable basis. For options on longer-dated instruments such as bonds and interest rate swaps, gains and losses on exercise are not immediately obvious under the due and receivable basis. This is because immediate gains and losses are only quantifiable in terms of changes in value of the instrument, which can only be determined by the mark to market rule and not as current tax law states, under a realisation based method. This is because gains/losses on the exercise of options on longer dated contracts are determined by taking the difference between the strike price and the spot price on exercise. This is a function of taking the difference between the marked to market value of the instruments at the original strike and the yield at expiry of the option contract. The basis for calculating such gains/losses on options on longer dated instruments only adds to more uncertainty for users of bond or interest rate swap options because income under bonds is currently assessed under the 'compounding' accruals basis and interest rate swaps are subject to the 'daily straight line' accruals basis for tax accounting in Australia. For options on such longer-dated instruments therefore, current tax proposals recognise premium income on realisation, but the recognition of taxable gains and losses on such option contracts is not immediately obvious because such gains and losses imply a marked to market recognition whereas the recognition of taxable income on the actual underlying instruments is based on the 'compounding' or 'daily accruals' basis, depending on the nature of the product.

These examples have attempted to show the chaos and confusion caused by the 'cocktail' of rules used, to measure income from instruments of similar genesis. At the very least, these examples make a strong case for a unified tax base and its assessment. There appears to be some recognition given to this in the new proposals put forward by the Australian Tax Office in its December 1993 Consultative Document, towards adopting the mark to market rule for assessing income from all short-dated instruments, including short-dated option contracts. This still leaves problems associated with longer-dated instruments largely unresolved, as the next set of examples demonstrate.

2.3 : Taxation considerations regarding Interest Rate and Cross-Currency Swaps, Forward Foreign Exchange instruments and Fixed Interest securities:

The interest rate and cross-currency swap markets, bonds, and the forward foreign exchange markets, have developed more or less independantly from each other and for different reasons. For instance, the forward foreign exchange markets grew primarily out of the need for borrowers of foreign currency to cover currency exposures, while the interest rate and cross-currency swap markets expanded significantly in the early 1980s in response to the need by high quality credit borrowers to tap global markets for their funding requirements, as the domestic bond markets alone were increasingly not sufficient for this purpose. The separate developments of the swap and forwards markets is perhaps what has contributed to the lack of recognition among non-practitioners, of the very similar nature of such instruments that now leads to their often being used inter-changeably for risk management and outright position

taking. The common characteristics of such instruments and their markedly differing tax treatments are demonstrated by the following examples.

EXAMPLE A:

---------- An Australian financial institution considers entering into a 3-year forward foreign exchange contract in which it commits to sell forward US $75.0 million in 3 years against Australian dollars. To obtain the necessary US dollars the financial institution will sell in 3 years time, it enters into a spot foreign currency transaction in which it purchases US $75.0 million spot and sells the corresponding Australian dollars. Currreny and interest rates are as follows:

Australian/US spot exchange rate: 0.75 cents US = 1.00 AUD.
3 Year Australian interest Rate: 13.0% p.a. paid semi-annually in arrears.
3 Year US interest Rate: 7.0% p.a. paid semi-annually in arrears.
Spot date: 30 March 1994.
Forward date: 30 March 1997.

Forward points are calculated based on (a) in Appendix One which represents the standard market methodology for calculating forward points. Once the forward points are derived and hence the forward exchange rate, it is possible to represent both the spot and the forward legs of the contract in terms of the actual cash flows generated. This is shown in Table 2.3 (A) in Appendix One.

The cash flows show that the financial institution enters into a spot foreign contract in which it buys USD 75.0m and sells AUD 100.0m on 30 March 1994. On contract maturity date (30 March 1997), the financial institution sells USD 75.0m and buys Australian dollars at the forward exchange rate.

The financial institution could replicate the cash flows from this transaction by: (i) Purchasing a 3-year Australian zero-coupon bond with face value of AUD $118.71 million, and (ii) Issue a US zero-coupon bond for a similar term with face value of US $75.0 million.

Assuming that interest and exchange rates are the same as above, then the cash flows from the replicating transaction are in TABLE 2.3 (B) in Appendix One.

The cash flows on the two bonds are derived assuming the bond principal amounts are known for delivery at maturity. These amounts are kept to be the same as the forward delivery cash flows at maturity in Table 2.3 (A). Once the delivery amounts at maturity are known, then the zero-coupon proceeds at start date are derived by present-valuing the principal amounts due at maturity, to spot date, using the two respective interest rates. This is done as follows:

Australian dollar zero-coupon proceeds at spot date are derived as follows:

$$\text{Australian dollar zero-coupon proceeds} = \frac{118.71}{(1 + 13.0/200)^{6}} = 81.35$$

US dollar zero-coupon proceeds at spot date are derived as follows:

$$\frac{75.00}{(1 + 7.0/200)^{6}} = 61.01$$

From Table 2.3 (B), it is obvious that there are some differences with respect to the cash flows generated at spot date to those in Table 2.3 (A), even though the cash flows at maturity date and the implied exchange rates are the same. This arises due to the somewhat differing characteristics of forward foreign exchange contracts to zero-coupon bonds. The differences arise essentially from the nature of forward foreign contracts where the cash flows of one currency leg are kept constant while the other currency leg is the basis that is used to calculate the net interest amount implied in the swap points. In the two zero-coupon bonds on the other hand in Table 2.3 (B), the interest amounts are calculated individually and designated in the respective currencies. Overall, the differences are insignificant in material terms and do not alter the fact that the zero-coupon bonds replicate the forward foreign exchange transaction illustrated in Table 2.3 (A).

The cash flows from the initial transaction is also be replicated by the following transaction using interest rate and cross currency swaps. (i) Enter into a zero-coupon Australian dollar interest rate swap in which the financial institution receives one fixed interest lump-sum payment in advance and pays a series of floating rate payments, both based on a face value of AUD 118.71 million. (ii) Enter into an opposing US dollar zero-coupon swap in which the financial institution makes one lump-sum fixed US dollar interest payment in advance and receives a series of floating rate interest receipts based on a US $75.0 million face value. (iii) Enter into an US/Australian cross currency basis swap in which the institution makes a series of floating rate interest payments based on US $75.00 mill. principal and receives a series of Australian dollar floating rate interest flows based on AUD $118.71 million principal. Principal exchange on the basis swap takes place at beginning and maturity of the cross-currency swap. Assuming all interest and currency rates are the same as before, the cash flows from this transaction are in TABLE 2.3 (C) in Appendix One. The floating cash flows on the Australian and US legs of the swap are based on the six-monthly BBSW and LIBOR rates, in accordance with current market convention.

The lump-sum amounts on both zero-coupon swaps represent the difference between swap face value and discounted net proceeds. The methodology used in deriving the discounted net proceeds is the same as that used in TABLE 2.3 (B). The floating/floating basis swap, requires a principal exchange at spot and re-exchange at maturity ie. on March 30 1994 and March 30, 1997 respectively, at the original spot exchange rate of AUD '1.00 = US $ 0.75. This is in accordance with market convention on cross-currency swaps. Net cash flows resulting from TABLE 2.3 (C) are shown in TABLE 2.3 (D) in Appendix One.

The economic nature of the cash flows in TABLES 2.3 (A), (B)

and (D) are identical although the cash flows in TABLE 2.3 (A) vary somewhat from those in TABLES (B) and (C). These can be adjusted through a spot foreign exchange transaction, buying back some Australian dollars and selling equivalent US dollars. The assessment of taxable income under current Australian rules for each outcome is vastly different however. In TABLE 2.3 (A), the cash flows are labelled as a forward foreign exchange transaction. Under current Australian tax laws, gains and losses on forward foreign exchange contracts are covered by the general provisions of sections 25 and 51 of the Income Tax Assessment Act to the extent that these gains and losses are on revenue account and recognised on a realisation basis at maturity of the contract. In TABLE 2.3 (A), the financial institution incurs a net gain of Australian $18.71 million, this being the net difference between the initial and final cash flows converted to Australian dollars. The AUD $18.71 million will be assessable as income at maturity in the 1997 tax financial year. In TABLE 2.3 (B), the cash flows are labelled as Australian dollar and US dollar denominated bond flows and are therefore covered by Division 16E of the Income Tax Assessment Act. Under this provision, interest income/expense is derived on a daily basis, based on a continously compounded notional principal on a semi-annual basis. The rates on which the principal amounts notionally accrue, are their respective yields to maturity. For this example, the rates are 13.0% p.a. semi-annually on the Australian bond and 7.0% p.a. semi-annually on the US bond. Because one bond is US dollar denominated, the 'daily compounding' accrual flows on the bond will be converted to Australian dollar proceeds using the daily spot exchange rates. The proceeds on both bonds will then be offset against each other, daily. The final outcome for the taxpayer is that net gains and losses are spread on a daily basis and he will be assessable for some part of those gains and losses in each financial year to 1997. The cash flows in TABLE 2.3 (D) represent a combination of two zero-coupon interest rate swaps and a floating/floating cross-currency basis swap. The taxation of swaps is covered by Australian ruling IT2682 which currently treats swap receipts and payments made in advance, assessable as income in the year they are made. The swap payments and receipts are shown in TABLE 2.3 (C), and after netting at the spot date, the results of which are shown in TABLE 2.3 (D), the taxpayer becomes immediately assessable on Australian $18.71 million income in the 1994 financial tax year. Regarding any currency gains or losses made on re-exchange of principal on the basis swap, or realised on maturity of both bonds under the previous structure, these become assessable as income only when they are realised at maturity. The assessability of exchange gains and losses is consistent with the treatment of forward foreign exchange contracts to the extent that the currency gains and losses are also recognised on maturity of the contract. It is the treatment of interest flows that appears to be problemmatic.

To summarize the current tax position regarding the three structures, under the forward foreign exchanhe structure the taxpayer is assessable on AUD $18.71 million income at maturity in the 1997 tax year. The zero-coupon bonds structure yields a slightly worse outcome for the taxpayer as his Australian $18.71 million income is spread and assessable on a daily compounding accruals basis through to maturity. Under the interest rate zero-coupon and cross currency basis swaps structure, the taxpayer becomes assessable on Australian $18.71 million income

immediately in the 1994 tax financial year. Such vastly different taxation outcomes for cash flows with similar payoff structures again highlights the lack of depth by taxation laws in the understanding of such instruments. For instance, the foreign exchange forward contract is viewed primarily as an instrument to cover currency exposures although its pricing is reflective of the interest rate differential that exists between two currencies. Forward foreign exchange contracts are used to manage both interest rate and currency risks as are bonds and interest rate and currency swaps and are therefore no different in substance from one another.

2.4 Capital/Revenue distinction:

The next example highlights problems with defining cash flows on the basis of whether they are 'capital' or 'revenue' in nature. The example relates to the decision of the High Court in F C of T vs The Myer Emporium Ltd 18 ATR 693, 87 ATC 4363. The case was discussed in Chapter One, but it is useful to reiterate some of the facts of the case. The Myer Emporium decision involved an arrangement whereby Myer lent on March 6 1991, $80 million to a subsidiary for a period of 7.25 years. On March 9 1991, Myer then assigned to Citicorp Canberra Pty Ltd (subsidiary of Citibank Australia), the moneys due as the interest payments and interest thereon. The consideration for the assignment was a sum of $45.37 million paid to Citicorp by Myer Emporium on March 9 1991. This sum was calculated on the basis of the outstanding interest payable under the loan agreement which was then discounted at a rate of 16.0% per annum. The interest however, continued to be paid by Myer Finance to Citicorp. The anticipated net result to the Myer Group would have been an arrangement whereby Myer effectively received a $45.37 million advance from Citicorp and was able to service both the effective principal and interest attributable to that advance by way of tax deductable payments made by Myer Finance. Citicorp on the other hand, would be receiving assessable income from Myer Finance. However, as Citicorp already had tax losses, it could shelter the interest income from taxation. Even if it did not have tax losses, it is arguable that Citicorp may have been able to look at the whole transaction as an in-substance loan arrangement, and thus categorize its receipts from Myer Finance as both receipts of (assessable) interest and (non-assessable) capital.

The Commissioner of Taxation did not accept that the $45.37 million was of a 'capital' nature. Rather, he claimed that it was assessable as income under either section 25(1) or section 26(a) of the Income Tax Assessment Act. The Supreme Court of Victoria found in Myer's favour and was subsequently supported by the Federal Court. However, the High Court, in a lengthy decision, found in favour of the Tax Commissioner and assessed the $45.37 million under both sections 25(1) and 26(a) as income. In its decision, the High Court pointed to the interdependence between the loan agreement and the assignment as being of particular relevance in arriving at its decision. It argued that if the two were entered into, independently of each other, then Myer could have had a strong case. The High Court also argued however that 'If the lender sells his mere right to interest for a lump-sum, the lump-sum is received in exchange for, and ordinarily as the present value of the future interest

which he would have received. This is a revenue not a capital item - the taxpayer simply converts future income into present income'.

The decision of the High Court is difficult to reconcile with interest rate swap ruling IT2682. Paragraph 86 of IT2682 quotes transactions which are deemed to be 'in substance loans or investments' such as cash flows from the Myer Emporium case and therefore, the lump-sum amounts are deemed to be of a 'capital' rather than of a 'revenue' nature. Para. 86 refers to such transactions where (i) accelerated fixed payments for the entire swap term are made to a party not hedging an underlying interest rate exposure, and regular 'floating' rate payments are then made back to the swap counterparty on terms that reflect a rate of return to that counterparty; or (ii) A swap counterparty, not hedging any underlying interest rate exposure, makes regular fixed rate payments and receives one back-end 'floating' rate payment at maturity date at terms calculated to provide a rate of return to that counterparty.

The Myer cash flows have been re-calculated hypothetically and are in TABLE 2.4 (A) in Appendix One. As the cash flows are re-constructing events in early 1981, certain assumptions regarding reinvestment rates etc. have to be made. The assumptions made however, do not materially affect the conclusions drawn because the purpose of the example, rather, is to examine its treatment under IT2682 and point to the differences with the earlier High Court decision. The disussion in Chapter One on this example stated that the series of interest payments were calculated and made semi-annually through to maturity in 7.25 years, and at a rate of 16.0% per annum. These rates have been adopted for the calculations in TABLE 2.4 (A).

The cash flows in Table 2.4 (A) in Appendix One represent an annuity stream in which the initial sum of $45.37 million represents a 'capital' sum receivable by the Myer Group. The amounts payable by the Myer Group in subsequent periods in equal instalments (derived for periods of equal frequency), represent a combination of principal and interest payments at 16.0% per annum on a semi-annual basis. The easiest way to derive the periodic payment schedule (and the method used for this study) was to solve for a set of equal six-monthly instalments to maturity of the transaction such that the net present value of the entire transaction to 9 March 1981, using 16% as the discount rate, was zero. A minor complication was that the initial instalment due, represented half that of the other instalments because the initial period was quarterly whereas subsequent periods were semi-annual in length.

Under IT2682 paragraph 86, cash flows from June 6 1981 to maturit y represent part 'floating' payments. The overall cash flows in TABLE 2.4 (A) represent an 'in substance' borrowing under IT2682 and consequent ly the initial lump-sum is deemed a 'capital' item and not assessable as income. The periodic payments are regarded as repayment of part princ ipal and part interest, the latter being claimable as a tax deductable item.

Prior to IT2682 however, Myer Emporium could still have structured the transaction in a way to get the desired result by making

the cash flows part of an overall cross-currency and interest rate swap transaction. Under this transaction, Myer would receive $45.37 million as part of a principal exchange for US dollars paid to Citicorp. Myer would then pay a series of Australian dollar flows representing principal and interest repayments on the Australian dollar leg of the transaction. It would, in turn, receive a series of US dollar cash flows from Citicorp, representing interest and principal repayments on the US dollar leg of the transaction. To illustrate the cash flows, additional assumptions regarding a spot exchange rate of $ 0.75 = AUD $ 1.00 and a 7.25 year US interest rate of 10.0% per annuum have been made. The cash flows on the cross-currency swap structure are in TABLE 2.4 (B) in Appendix One.

The cash flows in the cross-currency swap in Table 2.4 (B), have their origins in Table 2.4 (A) in which the Australian dollar flows are given. The Australian dollar principal amount of $45.37 million, is converted at the spot exchange rate to yield a US dollar principal amount. Once this is derived, then the periodic US dollar instalments are calculated in much the same way as the instalments in the earlier Table, except that the discount rate assumption is 10% per annum on a semi-annual basis for the US dollar side of the transaction. The cash flows in Table 2.4 (B) form what is more commonly known as an Australian/US dollar principal amortising cross-currency swap.

By converting its Australian dollar cash flow stream into an equivalent US dollar stream, Myer effectively funds the payment of its Australian dollar instalments from its US dollar account instead of from Australian dollars. On 9 March 1981 therefore, Myer receives an Australian principal amount of $45.37 million from Citicorp and pays a US dollar equivalent of $34.028 million to Citicorp. This it could do by either accessing US dollars from its own funds (assuming Myer has US dollar investments), or by converting its Australian dollar principal proceeds into US dollars through a spot foreign exchange transaction. Myer would then receive a series of equal US dollar instalments from Citicorp which it would convert into Australian dollar instalments at the spot exchange rate prevailing at each instalment date, and pay those to Citicorp.

Although economic income from both transactions (Table 2.4 (A) and (B)) is identical (except for a small foreign currency translation risk in the exchange of instalments in Table 2.4 (B)), the tax treatment under Australian tax laws for the two transactions is radically different from each other. For although Myer incurs a disadvantage in undertaking the second transaction in the sense that it loses the opportunity to utilise the Australian dollar principal for its own funding requirements straight away, as it must convert the proceeds to US dollars to exchange with Citicorp, it incurs significant tax benefits under Australian IT2682 used to recognise income from swap transactions. This is because the lump sum of $45.37 million would be seen as principal and not assessable as income. The subsequent part principal and interest payments on the Australian dollar side would be offset by similar cash flows on the US dollar side leaving no subsequent material taxation impact on Myer and Citicorp. These arrangements and the ruling in IT2682 (para.86) demonstrate the difficulties case law has, and will continue to have in extending concepts such as 'capital', to the area of financial instrument cash

flows, when such concepts are traditionally more suited to their application to non-monetary assets and liabilities.

2.5 'Due and Receivable' vs 'Accruals':

This case study highlights the differences, and the significance of such differences, between the current available rules to assess income. The purpose of the exercise is to attempt to put some perspective on the importance of this debate and perhaps lead to some judgement on the desirability, or otherwise, of a unified tax base and its assessment. Once this example is presented, there should be a realization that the current approach of maintaining various alternative rules to assess income from cash flows often from the same portfolio, falls far short of what is required to meet criteria such as 'efficiency' and 'neutrality'.

This is best illustrated by the use of an actual database, because it is only the presence of real material differences between the alternative assessments, if present, that make the need to find solutions all the more urgent. Three alternative assessment rules are used. These are: (a) the 'due and receivable' (DR) basis, in which actual receipts and payments are assessed as income. (b) the 'daily straight line' accruals, in which actual receipts and payments are apportioned on a daily basis over the calculation period in which they are realised. This method is currently in use for calculating taxable income for interest rate swaps under IT2682. (c) the 'mark to market' basis, in which income is assessed in terms of the differences in present value of a swap between two periods.

(a) The Database:

The database used was a Barclays Bank (Aust) interest rate swap portfolio dated 28 March 1991, consisting a total of approximately 500 individual swap transactions out of which 260 were pure Australian dollar denominated interest rate swaps. The remainder were cross-currency swaps and were excluded from the analysis because they brought in additional considerations regarding US dollar/Australian dollar exchange rate valuations, which only distracts from the object of the exercise. Income under the three alternative rules were assessed on a monthly basis for a total period of twelve months. A monthly time interval was regarded as ideal because it was felt that measuring income on a daily basis would be extremely tedious with perhaps only marginal improvements in the quality of results. Extending the measurement interval to quarterly, semi-annually or annually, presented the danger of being unable to record all floating rate resets on each swap transaction, as the majority of such resets were on a quarterly basis. Similarly, the total time period of twelve months was regarded as adequate for the purpose of this exercise, which was to show the different assessments of annual taxable income. The database is in TABLE 2.5 (A) in Appendix One.

(b) The Methodology:

The assessment of income under 'mark to market' requires

in the first instance, the valuation of individual swap cash flows using the appropriate discount factors. In other words, the assessment of income under the 'mark to market' rule requires an assessment of the present value of the future cash flows generated under the swaps. To do this, the fixed rate cash flows of each swap in Table 2.5 (A) are generated, using the parameters set out in the Table for each swap. Once this is complete, the one period floating rate cash flows for each swap are generated for each period using actual historical floating quarterly or semi-annual rates, depending on the specifications in Table 2.5 (A). The floating rate cash flows are re-generated only on maturity of the previous floating rate cash flows. Therefore, for swaps with quarterly floating rate resets, one would expect four floating rate receipts/payments for the measurement period of twelve months, whereas for swaps with six-monthly floating rate resets, one would expect two floating rate flows. For each monthly period in which income is assessed however, there would be only one floating rate cash flow present at any point in time because the next flow will not arise until the maturity of the current one.

For each swap in the portfolio in Table 2.5 (A), a complete set of periodic fixed rate coupons to maturity and the current one-period floating rate cash flow are generated at time t = 0. The cash flows are re-generated at monthly intervals for the entire twelve months. Once this is done, cash flows on the individual swaps are consolidated across dates to present a single complete set of portfolio of cash flows across the term structure curve. To value the set of future portfolio cash flows to current, an interest rate term structure curve needs to be generated at the beginning of each monthly interval. Specifically, as all portfolio cash flows are viewed as different combinations of pure discount securities, the valuation of such cash flows can only be achieved once the pure discount term structures are derived. The derivation of the discount term structures for each relevant point in time, is dictated by best market practice, as the methodology used to derive such curves differs somewhat from market to market. For Australian dollar swap valuations, the market requires the following database to construct the set of pure discount term structures (more formally known as swap zero coupon curves) for each valuation period: (a) overnight cash and physical bank bill rate to the date of the start of the first bank bill futures contract; (b) the first six bank bill futures contracts, thereon. All bank bill futures contracts are standardized and each has a maturity of 91 days; (c) Swap par rates from 2 to 10 years inclusive.

All shorter term physical cash and bank bill futures prices are taken as at the last dealt price at close of each particular day, with the latter being recorded from the daily close of the Sydney Futures Exchange. The par swap rates are taken from the mid point of the bid/offer closing broker prices each day. Par rates which fall between two recorded maturities are derived by interpolation on a straight line basis in accordance with current market practice in Australia. (For an analysis of such issues and on the construction of swap zero coupon curves, refer to papers by Frishling, Kameron and Stramandinoli (1994) and Black, Derman and Toy (1990)). The database used in the construction of the set of pure discount term structures, is in Table 2.5 (B) in Appendix One, and the methodology used to construct the zero curves

from the database is dealt with in detail in Appendix Two.

Once the zero curves are constructed, the swap portfolio is valued at the beginning of each month. As result, a total of twelve valuations of the portfolio are carried out. Once this is done, 'marked to market' (MM) income is formally assessed in the following manner:

$$MM = V_t - V_{t-1} + a_t$$

where V_t represents the net present value of the portfolio in period t, V_{t-1} represents the net present value of the portfolio in period t-1, and a_t represent all cash flows that are realised between period t and t-1.

The calculation of monthly portfolio income under the DR method is more straight forward and is based on actual realisation of swap receipts and payments at the end of each quarterly or semi-annual period. Therefore, under the DR basis, all cash flows that are realised within a particular month are recorded as DR income for that month. Under the daily straight line accruals basis, actual quarterly or semi-annual swap receipts or payments, that qualify as income under the DR basis, are apportioned to a daily equivalent. The daily equivalents are then summed for a monthly period to form as income under the straight line accruals basis, for that particular month. Portfolio income under the three alternative rules are then highlighted in TABLE 2.5 (C) in Appendix One.

(c) Results and Conclusions:

The results of Table 2.5 (C) draw attention to a number of points that are discussed below. The first and most obvious is the marked difference in income between the due and receivable and straight line accruals on the one hand, and the mark to market on the other. These differences manifest themselves in both monthly and annual measures of income, although if one were in a position to assess the overall income from the swap portfolio from inception to its final maturity, one would find that total income under the three basis would be identical. Although the time horizon is too short to conduct any meaningful correlation analysis among the alternative rules, the differences do reinforce the desired concept of an unified tax base for the very reason that taxable income is assessed for time periods that are arbitrarily fixed (annually for instance). This gives rise to the timing differences that account for the three very different sets of portfolio income. As swap portfolios (or for that matter, any portfolio of financial assets) is ongoing in nature, where assets are added or liquidated on an on-going basis, it would be immensly difficult (if not impossible) to assess income from the inception of a given portfolio to its final maturity, which is the necessary condition under which all three income rules would yield identical results for total income. Such timing differences which are the result of differing basis used to assess income, take on a more prominent role because of the linkage under tax laws between such timing differences

and accounting definitions used to define portfolio income. An example of such definitions is the distinction drawn between 'hedging' and 'trading' income where the former is assessed on a 'historical cost' equivalent (DR or straight line accruals basis) and the latter on a replacement value or 'marked to market' basis. Looking at the swap portfolio on face value in Table 2.5 (A), and in the absence of a set of objective conditions that could be meaningful in making distinctions between 'hedging' and 'trading' swap transactions, adopting definitions to differentiate income from the one portfolio, only to comply with preconceived ideas held by tax/ accounting professionals, will inevitably lead to a diversion of resources by financial and non-financial institutions towards tax minimization schemes. For instance, were a dual tax basis to be adopted in which transactions that were deemed as 'hedge' are assessed on the due and receivable or daily straight line accruals basis, and 'trading' transactions are to be assessed on the 'mark to market' basis, then this provides incentives to financial institutions that use swaps both to manage their own portfolio interest rate risk as well as operating a trading portfolio, to initiate back-to-back transactions between their two functions prior to the end of every tax financial year to show least income. If the opportunities are utilised on an on-going basis, it becomes difficult to see any possible benefits from this to the Tax Office. Alternatively, if taxation rules are adopted on the basis of the particular instruments chosen to generate cash flows, then this will only provide incentives to all financial instrument users to replicate cash flows with only those instruments that give the most favourable tax outcome, as illustrated in earlier examples. These are not hypothetical assertions but considerations that have been and are, given considerable importance by users of financial instruments. To look at the Barclays database at face value (as this is what the Taxation Office will be presented with), yields very little information on the economic purpose of the portfolio or the actual financial instruments used, to generate the cash flows. For instance, the same set of cash flows could be generated using forwards, options etc. Even where the economic purpose is identified as 'trading', it is not clear whether all individual swaps within the portfolio fulfill this role. Different swaps in the portfolio have varying degrees of covariance with the portfolio, so that some swaps may be performing more of a 'hedging' function than others even though the overall economic purpose of the portfolio may be to perform a 'trading' function. Such considerations can therefore only be evaluated by analysing the impact of individual transactions on portfolio risk and returns. It then becomes possible to assess overall income from the resulting portfolio cash flows which form the tax base.

The examples in this Chapter thus highlight the need for a single rule to assess income from financial portfolios. The rule should objectively assess income on the basis of risks and return generated by the instruments in a particular portfolio. Portfolio risk is measured by income volatility whereas portfolio income is identified with value changes of the portfolio through time. Although such concepts are developed in considerable detail in Chapter Three, it is pointed out here that the 'marked to market' basis to assess income is identified with portfolio value changes through time. The 'marked to market' basis however, fails to discriminate income on the basis of the risk

characteristics inherent in the cash flows in the portfolio. The ideal rule to assess taxable income therefore needs to be more precise in this respect. Indeed, an argument used against proposing the 'marked to market' rule relates to the potentially large variations in income that are present compared to the other two basis. This can be for instance, seen by the relatively large variations in monthly 'mark to market' income in Table 2.5 (C), compared to assessments under the other rules. This is an often used criticism of the 'mark to market' rule because of its taxing of 'unrealised' income, thereby placing, in many cases, an undue taxation burden on users of financial instruments. This is one reason why consideration is given to limit the operation of the 'mark to market' rule to financial instrument 'trading' operations, because such operations are viewed primarily as being carried out by relatively large financial institutions that can bear the potentially large variations in the tax bill from year to year.

By attempting to formulate a rule that measures economic income objectively across time from portfolio value changes, (which the 'marked to market basis does), and one that discriminates income on the basis of risk (which the 'marked to market basis does not), it may be possible to address some of the concerns that have been raised regarding the 'marked to market' rule, namely, the undue burden the relatively small taxpayers may have to bear under such a rule. The concern here is one of how equitable is the rule. One way of partially overcoming such concerns is to consider imposing differing tax rates on the different risk categories of income. This will reduce to some extent, the potentially large variations in tax paid each financial year.

2.6 CONCLUSION:

The case studies in this Chapter and the discussion in Chapter One point at the very least, to a need for a new direction to this debate. Until now, the legislation currently in place in most countries and the endless Consultative documents and amendments put forward, have done very little to address the problems discussed in Chapters One and Two. In the meantime, on-going developments in financial technology have only added a measure of urgency to this debate. The ideal tax rule calls for a unified tax base and one which recognises economic income by meeting the three taxation criteria of 'efficiency', 'neutrality' and 'simplicity' in terms of their workable definitions in Chapter One. Emphasis on more legalised definitions will only shift the focus further away from finding possible 'real' solutions. The case studies in this Chapter for example, illustrate the impossibility of tax rules that rely on labelling of financial instruments as a guide to their assessment of income, to attain 'neutrality' as is currently defined in terms of the 'repackaging rule'. Chapter Three develops the framework for the methodology that is to be used in assessing income. In so doing, it attempts to address some of the concerns raised in Chapters One and Two.

CHAPTER THREE

PROPOSED MODEL: METHODOLOGY

3.1 INTRODUCTION:

This chapter is primarily concerned with the fundamental issue of this study, namely the construction of a simple framework for identifying the true economic income from a series of cash flows. To do this, one needs to identify the wealth and value changes through time, which is not easily done, given the sometimes complicated set of cash flow characteristics from a typical instrument or book of such instruments. Only once the concepts of wealth and value changes are dealt with, can then one proceed to evolve theoretically adequate tax rules, or to examine how far rules conventionally proposed are consistent with economic theory.

The scheme of the Chapter is as follows. Section 3.2 contains the bulk of the conceptual development of the proposed model. After setting notations, the income components are identified and shown to be derivable from an underlying model of wealth accumulation. The analysis is illustrated by an interest rate swap although it can readily be extended to other instruments such as forwards, futures, options etc. because the model is primarily concerned with identifying economic income implied in a series of cash flows than the origin of the cash flows themselves. It is shown that when correctly identified, economic income consists of a 'current' component and a 'non-current' gain or loss. These are shown to be related to the traditional concepts of 'risk-free' and 'risky' income found in the finance literature and their relative composition in total portfolio income is largely determined by the variance of portfolio returns. Section 3.2 also applies the income analysis to tax rules currently in use or proposed. It is shown that the mark to market correctly measures total economic income, whereas the due and receivable and the straight line accruals do not. The mark to market rule produces identical results to the proposed model to assess total economic income but it is the proposed model that provides theoretical credentials for the breaking down of total economic income into its relative risk components.

Section 3.3 outlines the methodology that is to be used in Chapters Four and Five, to empirically test the proposed model versus the tax rules currently in use or proposed. The Section outlines the methodology used to create databases on sets of interest rate swap cash flows through the use of simulation exercises, to jointly show the impact of changes in portfolio variance on total economic income and the relative composition of the risky and non-risky streams, and on the assessment of income under the three rules currently used or proposed.

A series of statistical tests based on Ordinary Least Squares, are proposed in Chapter Five to run on the different sets of databases of simulated cash flows, that are distinguishable only on the basis of variance and returns. Other considerations such as whether a portfolio is a designated 'hedge' or 'trade' are irrelevant because such terms are inevitably broken down into relative trade-offs between portfolio return and variance. The results of the statistical tests are independent of the instruments used to generate the simulated cash flows, although it it indicated at the outset that such cash flows are generated from sets of interest rate swaps. Finally, the concepts that are to be introduced in the proposed model and the nature of the subsequent empirical work require a treatment of cash flows that have been generated for the entirety of a swap or portfolio. This is best done by simulation of sets of cash flows and term structures instead of obtaining such information from real databases like the Barclays' interest rate swap portfolio introduced in Chapter Two. This is because any benefits that flow from reconstructing past cash flows and term structures, to be able to present a complete profile of portfolio income from its inception to maturity, assuming that this is possible, will almost certainly be undone by the construction of simulated and therefore unreal term structures for future dates, that would have to be necessarily constructed to value future cash flows in a the real database at future dates.

3.2 : INCOME IDENTIFICATION AND THE PROPOSED MODEL:

3.2 (a) Notation:

The analysis is conducted in discrete time and the notations used are as follows:

t = interval of time between two instant periods of time t-1 and t and T represents the total number of periods.

V_t = value of the position (instrument, book etc.) at instant t ie. at the end of period t.

a_t = a realised cash flow to accrue over period t, treated as coming to book at the end of period t.

r_t = the one period known floating interest rate to hold over period t, known at the start of the period at instant t-1. The cash flow resulting from this comes to book at the end of period t.

r_{1t}, r_{2t} = the one period implied forward rates at time t, for periods t+1, t+2,...etc. These are defined in terms of the zero-coupon rates (yields on pure discount securities) R_{0t}, R_{1t}, R_{2t} .....as follows

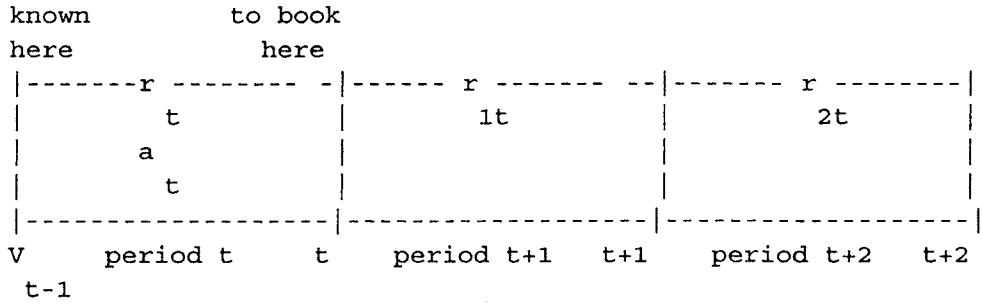
$$(1+R_{1t})^2 = (1+R_{0t})*(1+r_{1t}),$$

$$(1+R_{2t})^3 = ((1+R_{1t})^2)*(1+r_{2t}) \text{ etc.}$$

with the convention that $r_{0t} = R_{0t} = r_t$, the current one-period floating rate.

The following exhibit illustrates the notations on a time line, seen as of instant t-1.

EXHIBIT 3.2 (a)



Time line, as seen as of instant t-1 in real time.

The value of a swap with unit face value paying constant coupon c and with maturity T left to run is, at historical time t-1 is:

$$(1) \quad V_{t-1} = \frac{c}{1+r_t} + \frac{c}{(1+R_{1t})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-1,t})^T}$$

If real time moves on one period, both the spot and zero term structure rates will change, and the value of the position will be:

$$(2) \quad V_t = \frac{c}{1+r_{t+1}} + \frac{c}{(1+R_{1t+1})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}$$

A single interest rate swap is now introduced which generates

a series of cash flows over time. The realised cash flows on the swap at period t, $(c - r)$ will be denoted as a_t and are random in nature. The three alternative rules currently in use or proposed can now be denoted in current notation. Income assessed in period t is denoted as follows:

(3) Due and receivable $= a_t$

(4) Straight line daily accruals $= a_t$ / (no. of days in period t)

(5) Mark to market $= V_{t-1} - V_t + a_t$

3.2 (b) Derivation of the Proposed Model:

The starting point for the development of the proposed model is to properly define 'wealth', as it accumulates to the buyer of the interest rate swap. Once this is done, other concepts such as 'income' flow on naturally. 'Wealth' in period t-1 is defined in terms of the value of the swap at period t-1 and the sum of past accumulated cash flows realised to period t-1. Formally, wealth W_{t-1}, is defined in equation (6) as follows:

$$W_{t-1} = V_{t-1} + a_1(1+r_2)(1+r_3)..(1+r_{t-1}) + a_2(1+r_3)(1+r_4)...(1+r_{t-1})$$
$$+ a_3(1+r_4)(1+r_5)....(1+r_{t-1}) + a_4(1+r_5)(1+r_6)....(1+r_{t-1})$$
$$+.....+ a_{t-2}(1+r_{t-1}) + a_{t-1} \quad (6)$$

where $r_2, r_3, r_4, \ldots\ldots\ldots r_{t-1}$, are the actual one-period floating rates of interest and V_{t-1} is from equation (1).

Equation (6) is abbreviated to:

$$W_{t-1} = V_{t-1} + a_{t-1} + \sum_{i=1}^{t-2} a_i(1+r_{i+1})(1+r_{i+2})(1+r_{i+3})....(1+r_{t-1}) \quad (7)$$

At instant time t-1, the investor continues to assess his

position on whether to hold the swap or sell it in the marketplace. If he decides to sell the swap at time t-1, then he realises V_{t-1} and the accumulated sum of cash flows that have been realised to date. If the individual decides to hold on the swap, then he forgoes V_{t-1} and re-assesses his position at time t. If the individual decides to hold the swap to instant time t, he will do so only if he expects the following result:

$$(8) \quad E(W_t) > W_{t-1} * (1 + r_t)$$

where E( ) is the expectation variable.

Alternatively, equation (8) can be expressed as:

$$(9) \quad W_t = W_{t-1} * (1 + r_t) + y_t$$

Equations (8) and (9) illustrate the investor's preference to hold the swap if he expects period t wealth to be greater than wealth attained by selling the swap at instant t-1 and investing the proceeds at the riskless rate r_t to time t.

Equation (7) is extended to the derivation of income which is represented by $W_t - W_{t-1}$. Extending equation (7) to W_t,

$$(10) \quad W_t = V_t + a_t + \sum_{i=1}^{t-1} a_i (1+r_{i+1})(1+r_{i+2}).....(1+r_t)$$

Subtracting (7) from (10), yields:

$$(11) \quad W_t - W_{t-1} = V_t - V_{t-1} + a_t + r_t \left[a_{t-1} + \sum_{i=1}^{t-2} a_i (1+r_{i+1})...(1+r_{t-1}) \right]$$

where

$V_t - V_{t-1}$ is the change in value of the swap between period t and t-1,

a_t is the realised flow in period t known at instant t-1, and

$$r_t \left[a_t + \sum_{i=1}^{t-2} a_i (1+r_{i+1})......(1+r_{t-1}) \right] = r_t [W_{t-1} - V_{t-1}]$$

represents the value of past accumulated cash flows. Therefore,

$$(12)\quad W_t - W_{t-1} = V_t - V_{t-1} + a_t + r_t [W_{t-1} - V_{t-1}]$$

Identification of true economic income proceeds by considering changes in wealth over the period. If the swap is held to maturity, then equation (12) relates the change in wealth in period t to changes in value of the swap ($V_t - V_{t-1}$) between periods t and t-1, the realised cash flow from the swap (a_t) at the end of period t, and the one period interest realised on investing at the known rate r_t all past accumulated cash flows $[W_{t-1} - V_{t-1}]$. Equation (12) can also be expressed in another form in equation (12a).

$$(12a)\quad W_t - W_{t-1} = r_t W_{t-1} + y_t$$

where

$$(12b)\quad y_t = V_t - (1+r_t) V_{t-1} + a_t$$

Thus, in this model, $r_t W_{t-1}$ represents 'current' income and y_t represents 'non-current' income, or alternatively an unanticipated gain or loss on an implied forward contract, in period t. The model is under the restrictive assumption that the swap is held to maturity and all cash flows resulting from the swap, are reinvested back at the one-period interest rate at each payment date. Under a less restrictive assumption, the investor may be able to sell the swap in any period or pass all cash flows realised from the swap into another account. Under these conditions, the term $r_t [W_{t-1} - V_{t-1}]$ in equation (12) is zero and equation (12) will reduce to:

$$(13)\quad W_t - W_{t-1} = V_t - V_{t-1} + a_t$$

or alternatively, combining with equation (12b),

3:

$$(14) \quad W_t - W_{t-1} = r_t V_{t-1} + y_t$$

or, combining equations (13) and (14) to yield:

$$(15) \quad r_t V_{t-1} + y_t = V_t - V_{t-1} + a_t$$

The right hand side of equation (15) represents the familiar mark to market assessment of income. The left hand side represents the proposed model. It shows the splitting of total economic income into a 'current' component $r_t V_{t-1}$ and a 'non-current' or unanticipated gain or loss y_t. The interpretation of the current component is quite straightforward. It represents the income that would be derived if the swap or portfolio were sold in the market place and the proceeds invested over the period at the known spot interest rate r_t. Less obvious is the interpretation of the component y_t. In the case of the swap, it may be interpreted as a gain or loss on the value of an implied forward contract. The forward contract consists of cash flows that are yet to be realised on the swap. These gains or losses could be described as a capital gain or loss, although from the earlier discussion in Chapters One and Two, it would be more appropriate to treat such gains and losses on revenue account. The concepts of current and non-current components are in one sense, similar to the concepts of 'realised' and 'unrealised' income. The difference is that concepts such as 'realised' and 'unrealised' income are an implicit acknowledgment of a lack of market 'completeness' in terms of a full set of term structures available for the valuation process, whereas concepts such as 'current' and 'non-current' components in overall economic income imply quite the opposite.

Total economic income is shown to be correctly derived by the mark to market rule and is identical to that in the proposed model. Both the proposed model, and the mark to market rule are 'neutral' in the sense that they do not discriminate between cash flows that are primarily of the same economic nature, but re-packaged differently or used for particular purposes. The proposed model and the mark to market rule emphasize 'simplicity' because they assess portfolio income, irrespective of the size and composition of the portfolio whereas other approaches such as the straight line or compounding accruals are single instrument based. The mark to market rule may not be considered 'efficient' however, in the sense that it may unduly discourage risk-taking behaviour by not discriminating between the

relative riskiness of cash flows. The 'efficiency' of the proposed model is the subject of discussion for the rest of Section 3.2.

3.2 (c) 'Efficiency' and the Proposed Model:

A portfolio of cash flows generates a set of random risk and return trade-offs at instant time t. These are determined by portfolio price movements between time t-1 and t which are influenced by random changes in portfolio cash flow composition and non-stochastic term structures on interest rates. Through time, new cash flows, with varying degrees of covariance with the portfolio, are randomly introduced, thereby altering portfolio composition. The covariances of such individual cash flows directly impact on actual portfolio returns and variance at time t. Similarly, random movements in the term structures within the period also directly impact on both actual portfolio returns and variance. The question of taxation 'efficiency' within this framework can be approached in two ways. The first is to derive marginal tax rates that make investors' indifferent to taxation considerations when choosing one set of cash flows to another. This follows from the approach taken by Domar & Musgrave (1944), Mossin (1968), Stiglitz (1969), Richter (1970) and Ahsan (1976). In a way, these studies have attempted to formulate methodologies to derive marginal tax rates at which post-tax risk-return trade-off outcomes remain unaffected. The second approach, and one which the proposed model attempts to undertake, is not to derive such rates but to correctly assesses balances between risky and non-risky portfolio income, that leads to a systematic treatment of income assessment and risk taking. The model therefore seeks to demonstrate that the balance between the two components is largely related to changes in portfolio variance over time. As variance of returns decrease for a given set of cash flows, the proportion of 'non-current' or risky income in overall economic income falls. This result is derived in greater detail later.

To formally demonstrate 'efficiency', the proposed model in equation (15) and other concepts are revisited. Equation (15) is:

$$r_t V_{t-1} + y_t = V_t - V_{t-1} + a_t$$

and rearranging the equation, yields:

$$(16) \quad y_t = V_t - (1+r_t) V_{t-1} + a_t$$

For a single interest rate swap, its value at time t is given by equation (2) as follows:

$$V_t = \frac{c}{1+r_{t+1}} + \frac{c}{(1+R_{1t+1})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}$$

Substituting for V_t and V_{t-1} in equation (15) and (16) yield the following results:

$$(17)\quad y_t = \left[\frac{c}{1+r_{t+1}} + \frac{c}{(1+R_{1t+1})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}\right]$$

$$- (1+r_t)\left[\frac{c}{1+r_t} + \frac{c}{(1+R_{1t})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-1,t})^{T}}\right]$$

$$+ a_t$$

and $r_t V_{t-1} =$

$$(18)\quad (r_t)\left[\frac{c}{1+r_t} + \frac{c}{(1+R_{1t})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-1,t})^{T}}\right]$$

From the initial notation, r_t is identical to R_{0t}, which is the zero-coupon rate known at instant time t-1 (for period t), and also represents the actual one-period floating rate known at instant t-1. From Exhibit 3.2 (A), a_t is known at instant time t-1 and is defined as:

$$(19)\quad a_t = c - R_{0t}$$

ie. a_t is the net receipt or payment made at time t, as a result of netting the fixed coupon c and the one-period floating interest rate r_t (or alternatively R_{0t}) known at instant time t-1 but charged at time t. Assuming a unit face value for floating rate cash flow valuations, so as to be consistent with fixed coupon valuations,

$$\text{the term } \frac{c - R_{0t} - 1}{1 + R_{0t}} \text{ can be substituted for } \frac{c}{1 + r_t}$$

in equation (2) for deriving an expression for V_{t-1}, or more succinctly this term is expressed as:

$$(20) \qquad \frac{a_t - 1}{1 + R_{0t}}$$

Substituting (17) and (18) into (15), and (20) into (17) and (18), and expanding the series, gives the expression for $r_t V_{t-1} + y_t$ in the following terms:

$$(21) \qquad r_t V_{t-1} + y_t =$$

$$\left(R_{0t}\right)\left[\frac{a_t - 1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \cdots + \frac{c+1}{(1+R_{T-1,t})^T}\right]$$

$$+\left[\frac{a_{t+1} - 1}{1+R_{1t+1}} + \frac{c}{(1+R_{1t+1})^2} + \cdots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}\right]$$

$$-(1+R_{0t})\left[\frac{a_t - 1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \cdots + \frac{c+1}{(1+R_{T-1,t})^T}\right] + a_t$$

where $r V = V_t - V_{t-1}$

$$(R_{0t})\left[\frac{a_t - 1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \cdots + \frac{c+1}{(1+R_{T-1,t})^T}\right]$$

and the rest y_t.

How portfolio variance is defined is crucial to this analysis because of the diversity of the measures used in the current finance literature to assess variance, and its impact on the overall results in this study. Traditionally, portfolio variance has come to be defined in a number of ways in the finance literature, ranging from the deviation of expected returns from their mean based on historical volatility of returns (eg. measurement of intra-day high/lows in asset prices) or from the volatility implied in the option prices of the underlying assets in the portfolio. Because the portfolio in this study comprises of debt instruments as the underlying assets, one way to assess the volatility of portfolio returns is to derive the changes to the value (V) of the portfolio through time from t = 0 to maturity and then to calculate the actual deviation of V from its calculated mean. Such an approach runs into a few conceptual problems centered around the derivation of the mean V. If the traditional approach in finance of deriving the mean V is used ie. to take the arithemetic average of all portfolio Vs through time from t =0 to maturity (adjusting the Vs to changes in portfolio composition as old swaps mature and new swaps are introduced), then the current study which is based on simulating portfolios, gives too few data points to make a meaningful study. Clearly, a more desireable outcome here would be to have an actual historical database (such as the Barclays database in Chapter Two) at our disposal. Ofcourse, such an outcome gives rise to its own set of

unique problems to do with the construction of term structure interest rate curves discussed in Chapter Two. A second approach may be to define mean portfolio Vs as a series of portfolio values eminating from a non-stochastic term structure curve from time t = 0 to maturity. While non-stochasticity is defined later, it is sufficient to point out here, that concepts of variance based on this, mean that for the special case of portfolio income being derived under a non-stochastic term structure curve in the model, portfolio variance is zero from time t = 0 to maturity, which means by definition that the non-current component (y_t) of income equals zero, at each period from time t = 0 to maturity. This result contradicts the results from the model which shows that non-current income $y_t > 0$, even under the case of a non-stochastic term structure scenario from time t = 0 to maturity, and will be demonstrated later on. Consequently, such volatility measures are rejected for use in this study. (Volatility can be defined in several ways in the finance literature. For a review refer to Garman and Klass (1980)).

To attempt to overcome some of these conceptual problems, the study uses accounting based definitions of volatility. Portfolio volatility in this study therefore, is defined in terms of changes in actual V over time. From equation (2), equation (22) is derived to more formally illustrate changes in V between instant t-1 and t.

$$(22) \qquad \frac{V_t - V_{t-1}}{(R_{0t+1}, R_{1t+1}, \ldots, R_{T-2,t+1}) - (R_{0t}, R_{1t}, \ldots, R_{T-1,t})}$$

The change in V comes from two sources. (i) A change in the zero term structure rates between instant t-1 and t. This change itself, is two-dimensional in nature and is a function of: (a) Actual shifts in the term structure curve between time t-1 and t. This is measured by the difference in the time t-1 and t zero curves at time t. (b) Time erosion and its impact on zero rates. This is measured by the difference at time t between the t-1 zero curves at time t-1 and time t. (ii) The impact of a continuing erosion in time value (pure time decay) on portfolio V itself. (a) is formally a measure of portfolio delta and is defined in terms of the partial derivatives $dV_t / dR_{0t+1}, \ldots, R_{T-2,t+1}$, where $\{R_{0t+1}, \ldots, R_{T-2,t+1}\}$ represent the zero term structure rates at time t. Portfolio delta at time t is measured in terms of a change in the value of a portfolio (V_t) due to a unit shift in zero term structure rates ($R = R_{0t+1}, R_{1t+1}, \ldots, R_{T-2,t+1}$). This method to deriving values for portfolio delta standardizes each delta value to a unit shift in term

structure rates at each instant t.

Theta is the term used to measure the impact of time erosion on term structures and portfolio value (refer Luedecke 1991). It covers both (i(b)) and (ii). Portfolio theta at instant t is defined formally as:

$$(23)\quad \text{Theta} = \frac{dV_t}{dt} = \left| \sum_{i=0}^{T-2} \frac{X_i}{(1+R_{it+1})^{(i+1)}} \frac{dR_{it+1}}{dt} \right| + V_t * \ln(1+R_{it+1})$$

where X_i represents the ith cash flow at time t. For a vanilla interest rate swap, the cash flows are in the form of uniform fixed coupons c and one-period floating rate cash flows. Theta is expressed more succinctly in the form:

(24) Theta = Slope effect (i(b)) + Time effect (ii)

The 'slope effect' in theta at time t, is the slope of the zero term structure curve at instant t and is measured by dR_{it+1}/dt. It represents the shift in the term structure at instant t caused by a unit shift in time. The 'time effect' represented by $\ln(1+R_{it+1})$ captures the pure effect of a progressively shortening time interval on cash flow valuation as the time unit continues to shift (pure time decay).

Overall implied portfolio point volatility is defined in terms of both dV/dR and dV/dt at each instant t. Both put together, give a measure of ex-ante instantaneous variance on portfolio income at each instant time period. Reductions in overall implied point volatility are therefore achieved by reductions in either dV/dR or dV/dt, or both. Recalling the expressions for V_{t-1} and V_t in equations (1) and (2) respectively and substituting the one-period floating cash flow into both equations:

$$(25)\quad V_{t-1} = \frac{c - R_{0t} - 1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-1,t})^T}$$

and

$$(26)\quad V_t = \frac{c - R_{0t+1} - 1}{1+R_{0t+1}} + \frac{c}{(1+R_{0t+1})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}$$

The partial derivatives are:
From equation (25):

$$(27)\quad dV_{t-1} / dR_{0t} = \frac{-c}{(1 + R_{0t})^2}$$

$$(28)\quad dV_{t-1} / dR_{1t} = \frac{-2c}{(1 + R_{1t})^3}$$

. . .

$$(29)\quad dV_{t-1} / dR_{T-1,t} = \frac{-T\,(c + 1)}{(1 + R_{T-1,t})^{T-1}}$$

and from equation (26):

$$(30)\quad dV_t / dR_{0t+1} = \frac{-c}{(1 + R_{0t+1})^2}$$

$$(31)\quad dV_t / dR_{1t+1} = \frac{-2c}{(1 + R_{1t+1})^3}$$

. . .

$$(32)\quad dV_t / dR_{T-2,t+1} = \frac{-(T - 1)(c + 1)}{(1 + R_{T-2,t+1})^{T-2}}$$

Reductions in portfolio delta (dV_{t-1}/dRs_{t-1} at time t-1 and dV_t/dRs_t at time t), assuming future known cash flows are constant, are achieved by raising zero term structure rates at time t-1 and t. The more significant the rise in term structure rates, the more severe the reductions in portfolio delta. In such cases, the impact on individual components of the model, $r_t V_{t-1}$ and y_t in equations (17) and (18), of dV_{t-1}/dRs_{t-1} and $dV_t/dRs_t \to 0$ yield interesting results.

To illustrate these results, equations (15), (17) and (18) are revisited. The overall model is represented by equation (15) below:

$$r_t V_{t-1} + y_t = V_t - V_{t-1} + a_t$$

and, substituting R_{0t} for r_t, and equation (19) yields,

$$(33)\quad y_t = \left[\frac{a_{t+1}-1}{1+R_{0t+1}} + \frac{c}{(1+R_{1t+1})^2} + \cdots + \frac{c+1}{(1+R_{T-2,t+1})^{T-1}}\right] - (1+R_{0t})\left[\frac{a_t-1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \cdots + \frac{c+1}{(1+R_{T-1,t})^{T}}\right] + a_t$$

and $r_t V_{t-1} =$

$$(34)\quad (R_{0t})\left[\frac{a_t-1}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \cdots + \frac{c+1}{(1+R_{T-1,t})^{T}}\right]$$

The set of partial derivatives (dV_{t-1}/dRs and dV_t/dRs) -----> 0 only if $R_{0t}, \ldots, R_{T-1,t}$ and $R_{0t+1}, \ldots, R_{T-2,t+1}$ approach infinity at time t-1 and t respectively. In such cases, the impact on y_t and $r_t V_{t-1}$ is immediately obvious from equations (33) and (34). As dV_{t-1}/dR_{t-1} approaches zero, V_{t-1} approaches -1 from equation (25). As dV_t/dR_t approaches zero, V_t also approaches -1. Substituting these values into equations (33) and (34) yields values for $r_t V_{t-1}$ and y_t. In such a case, $y_t = -1 + (1 + R_{0t}) + c - R_{0t} = c$ and, $r_t V_{t-1} = -R_{0t}$. Therefore, $y_t + r_t V_{t-1} = c - R_{0t}$ which is a from (19). This is the first result of the study. It shows that for large $R_{0t}, .., R_{T-1,t}$ and $R_{0t+1}, \ldots\ldots\ldots$, $R_{T-2,t+1}$, $y_t \rightarrow c$ and total economic income $(W_t - W_{t-1}) \rightarrow a_t$.

The result indicates that reductions in portfolio delta lead to, (i) the convergence of income under alternative assessments to the cash flow a_t which represents income under the due and receivable basis. (ii) the relative proportion of 'current' or 'risk-free' income in total economic income varies with the size of R_{0t}. If R_{0t} is large relative to the fixed coupons c, then 'current' income will dominate in overall economic income. If R_{0t} is small relative to the fixed coupon c, then non-current income dominates in overall economic income. Therefore, as values for portfolio delta approach zero as a result of very large values of Rs, is it generally expected that 'current' income will dominate in overall economic income. This is particularly the case for a portfolio exhibiting continually low delta values over successive time periods from time t=0 to maturity. For instance, convergence to a_t may not take place in the case where dV_{t-1}/dR_{t-1} approaches zero but dV_t/dR_t does not. Convergence will only take place if the entire set $\{V_{t-1}, \ldots\ldots, V_{T-1}\}$ continues to approach -1. The significance of such a result lies in the relationship between relatively low values for portfolio delta and the definition of the term 'hedging'. If a necessary condition for a 'hedge' portfolio is one that is required to have continually low deltas over time, then users of instruments such as corporates, who supposedly use them for 'hedging' requirements, must be able to demonstrate that they can meet a pre-determined low delta value on an on-going basis over time. In practice, most end-users of financial instruments such as corporates for instance, do not set targets for portfolio volatility as an objective when determining their 'hedging' requirements. A study of

a typical corporate cash flow portfolio over time would show large swings in delta values resulting from changing portfolio composition which in turn, leads to large swings in their marked-to-market income. These characteristics are no different to those of an investment bank's 'trading' portfolio. Concepts such as delta, theta and other volatility measures therefore, are useful in distinguishing the risk characteristics of individual portfolios and therefore provide a more objective assessment of risk-adjusted income from a portfolio.

For the opposing case, of $R_{0t}, \ldots, R_{T-1,t}$ and $R_{0t+1}, \ldots\ldots$, $R_{T-2,t+1}$ ---> 0, the results are not so clear-cut, and the relative composition of y_t and $r_t V_{t-1}$ in total economic income, then depends on the extent of movements in term structure rates between periods. From equation (32), y_t --> a --> c, as the set of $R_{0t}, \ldots\ldots\ldots, R_{T-1,t}$ and $R_{0t+1}, \ldots\ldots\ldots, R_{T-2,t+1}$ ---> 0. The impact on $r_t V_{t-1}$ in equation (34) is not so clear however because of the increase in size of V_{t-1} being offset by reductions in R_{0t}. This suggests that increases in portfolio delta, may lead to some increase in the proportion of the non-current component of income relative to the current component, although the extent of this increase depends on other factors such as the relative movements of short rates compared to long rates between two periods (ie. the shape of the term structure curve over the two periods).

Minimizing portfolio theta on the other hand, is considerably more difficult. Referring to equation (23), dV_t/dt is at a minimum only when $dR_{it+1}/dt = 0$. Since the latter term refers to the slope of the instant t term structure curve, a value of zero means that the term structure curve is flat in shape. The results under a flat term structure scenario are uninteresting and the case is therefore not pursued. In the Simulation Exercises conducted in Chapters Four and Five, implied portfolio volatility is minimized only by changes in term structure rates to minimize portfolio delta. Theta values are derived as a consequence, and are included in the regression analysis.

Finally, the model also handles outcomes where portfolio cash flow composition is static and term structure rates remain non-stochastic. Non-stochasticity between time t-1 and t is defined in terms of $R_{0t}, R_{1t}, \ldots, R_{T-1,t}$ at time t-1 and $R_{0t+1}, R_{1t+1}, \ldots, R_{T-2,t+1}$ at time t, such that at time t, $R_{0t+1} = R_{0t}$, $R_{1t+1} = R_{1t}, \ldots\ldots\ldots\ldots$, $R_{T-2,t+1} = R_{T-2,t}$. Under such a scenario, both the spot (r_t) and the

one-period forward rates remain unchanged as real time moves on one period. This delivers a set of $a_{t-1}, a_t, \ldots, a_{T-1}$ for individual swaps that are known with certainty at time t = 0 and remain unchanged to maturity. Under current rules such a transaction would be classified as a 'hedging' outcome in the professional literature. The results of the proposed model however, demonstrate that the set of cash flows $a_t \ldots a_{T-1}$ are not necessarily 'risk-less' income and the value of y_t is nonzero even in a stationary term structure environment, depending on the slope of the term structure curve and its impact on portfolio values $V_0, V_1, \ldots, V_{T-1}$, which are also non-stationary because of the on-going erosion of time value. (Again, refer to Luedecke (1991) and Bowden (1991) on the time value effects of swap valuations).

To demonstrate the impact of non-stochastic term structures on overall economic income and the relative composition of y_t and $r_t V_{t-1}$, one-period implied forward rates $r_{1t}, r_{2t}, \ldots, r_{T-1,t}$, and r_{1t+1}, $r_{2t+1}, \ldots, r_{T-2,t+1}$ are substituted for $R_{1t}, R_{2t}, \ldots, R_{T-1,t}$ and $R_{1t+1}, R_{2t+1}, \ldots, R_{T-2,t+1}$ respectively, in equations (1) and (2). Non-stochasticity means that $r_{t+1} = r_t$, $r_{1t+1} = r_{1t}$, $r_{2t+1} = r_{2t}$ etc. etc. and equations (1) and (2) are re-written as:

(35)

$$V_{t-1} = \frac{a_t - 1}{1+r_t} + \frac{c}{(1+r_t)(1+r_{1t})} + \ldots + \frac{c+1}{(1+r_t)(\ldots)(1+r_{T-1,t})}$$

and (36),

$$V_t = \frac{a_{t+1} - 1}{1+r_t} + \frac{c}{(1+r_t)(1+r_{1t})} + \ldots + \frac{c+1}{(1+r_t)(\ldots)(1+r_{T-2,t})}$$

where $a_{t+1} = a_t$.

Substituting into (16) gives the expression for y_t as follows:

$$(37)\quad y_t = \left| \frac{a_{t+1}-1}{1+r_t} + \frac{c}{(1+r_t)(1+r_{1t})} + \ldots + \frac{c+1}{(1+r_t)(\ldots)(1+r_{T-2,t})} \right|$$

$$- (1+r_t)\left| \frac{a_t - 1}{1+r_t} + \frac{c}{(1+r_t)(1+r_{1t})} + \ldots + \frac{c+1}{(1+r_t)(\ldots)(1+r_{T-1,t})} \right|$$

$$+ a_t$$

or alternatively, substituting $c - r_t$ for a_t and a_{t+1} above,

$$(38)\quad y_t = c * \left| \frac{1}{1+r_t} - \frac{1}{1+r_{1t}} + \frac{1}{(1+r_t)(1+r_{1t})} - \frac{1}{(1+r_t)(1+r_{2t})} + \ldots \right.$$

$$\left. \ldots + \frac{1}{(1+r_t)(\ldots)(1+r_{T-2,t})} - \frac{1}{(1+r_{1t})(\ldots)(1+r_{T-1,t})} \ldots \right|$$

Equation (37) represents the difference between the forward value of the swap, seen at instant t-1 and the actual value of the swap, seen at instant t. This represents the y_t component of income and is nonzero even if the term structure curve $(r_t, r_{1t}, \ldots)$ remain stationary.

Equation (38) expresses the same concept but in terms of the differences in the discount factors arising from the discrepancy between a realised (at instant t) spot rate r_{t+1} and the 'market prediction' of the same spot rate at instant t-1, namely the one-period ahead forward rate r_{1t}.

The latter is one position to the right of the spot rate along the term structure curve so if the forward rate term structure is normal (upward sloping) and stationary ($r_{t+1} = r_t$), then $r_{1t} > r_{t+1}$ and

$$\frac{1}{1+r_t} - \frac{1}{1+r_{1t}} > 0 \text{ in equation (38).}$$

For the receiver of fixed coupons on the swap, this will result in an 'unanticipated' gain from holding the swap to period t and y_t will therefore be positive. A similar result will hold for fixed rate payers on swaps in a negatively sloping term structure environment. The demonstration of the model and its results is complete.

These results form the basis of the empirical work in the next Chapter and their importance cannot be understated. The results and conclusions, demonstrate that it is possible to derive a framework to assess income in an 'efficient' manner, in terms of a proper appreciation of portfolio cash flows and risk. Equally, they demonstrate that it is possible to have a unified tax base and its assessment. The model is able to handle the assessment of income from all different portfolio types, and the treatment of 'hedge' cash flows becomes a special case of a portfolio with a continuing set of low delta values yielding income assessments similar to that under the due and receivable and straight line accruals methods, both of which have been traditionally espoused for the assessment of 'hedging' income in the professional literature.

Clearly, there are limitations to the study, both in its scope and the methodology used. A criticism that can be levelled is that the study uses simulations to create the databases and therefore requires the use of accounting based volatility measures that are created from the simulations themselves. While an actual database of cash flows and historical volatility databases are desirable, it should be noted that such databases are relatively rare for debt financial instruments in the field of finance. By using simulations as proxys to real events, the study seeks to provides a way forward to the creation of a methodology to recognise the true nature of economic income from a portfolio of financial instrument cash flows.

3.3 Empirical Analysis and the Proposed Model:

This part of the Chapter describes in detail, the simulation exercises performed to demonstrate the model's results and conclusions. Before this is done, it is useful to reiterate the conclusions once more. These are: (i) Overall economic income is correctly identified by both the proposed model and the mark to market rule in all cases whereas the due and receivable and the straight line accruals basis are only suited to assess income from portfolios exhibiting very low implied volatility. (ii) The proposed model discriminates income on the basis of risk, and

changes in the proportion of 'current' and 'non-current' income in overall economic income, are related to changes in portfolio volatility (delta and theta). (iii) A stationary but sloping term structure environment yields nonzero values for the 'non-current' component of income. This implies that income assessed under the due and receivable basis (a_t), is not entirely risk-free and consequently components from both 'realised' and 'unrealised' portfolio income, are included in portfolio 'current' and 'non-current' income, depending on the relative riskiness of portfolio income.

Four major portfolio simulation exercises are conducted in Chapter Four to demonstrate the results. Simulation Exercise 4.2 constructs a portfolio consisting of a single interest rate swap. The simulation analysis is conducted in discrete time and involves deriving end-of-period portfolio income under each rule as well as implied portfolio volatility. These measures are generated under an arbitrarily selected stochastic process on term structure rates from time t = 0 to maturity. Both income and volatility are derived from inception of the swap through to maturity. Income under the due and receivable, the straight line accruals and the mark to market rule are defined in equations (3), (4) and (5) respectively, and the proposed model is set out in equation (15). Portfolio volatility at instant t is measured in terms of portfolio delta and theta. Portfolio delta at time t is defined as the change in portfolio V_t for a one basis point shift in the zero term structure curve at instantaneous time t. In the absence of a consensus on the unit of measurement to be used for standardized portfolio delta, it is measured in actual dollar terms to reflect both size and directional movements in volatility. Portfolio theta at time t is defined as the change in portfolio value resulting from a day shift in time t. The change in portfolio theta results from both time erosion and a movement of portfolio cash flows along the term structure curve due to the day shift. Theta is also measured in dollar terms. A detailed example of how actual delta and theta values are derived, is given in Appendix Three.

The term structure curves at each instant time period in this and all other Simulation Exercises, are shaped in a step-wise form. The assumption of such a shape removes the need to make assumptions regarding interpolation of zero rates that fall between semi-annual periods, that otherwise would need to be carried out if smoothly sloping term structure curves are assumed instead. However, the assumption of a step-wise shape results in some unusually large shifts at discrete intervals, in theta values, especially in cases where large and often violent shifts in term structure curves have been necessarily made to control portfolio delta values.

The portfolio consisting of a single swap is constructed at inception to yield a set of fixed coupons c and successive one-period floating rate payments determined by $r_t, r_{t+1}, \ldots\ldots, r_{T-1}$, to maturity.

The fixed coupon rate is calculated to make $V_0 = 0$, a reflection of the fact that no money changes hands up-front. Alternatively, the coupon rate can be seen as the yield on a swap of face value unity that sells at par. Once the swap is constructed, then successive $V_1, V_2, \ldots, V_{T-1}$ are calculated on the basis of equations (1) and (2). The set of zero term structures from time t = 1 onwards, are selected at random to follow an arbitrary stochastic process through to maturity. Once the set of $V_1, V_2, \ldots, V_{T-1}$ are derived, then it becomes possible to calculate income under the mark to market rule and the proposed model. With income under both due and receivable and straight line accruals also assessed, tests for correlation between income under alternative rules are conducted using Ordinary Least Square Estimation techniques. The actual tests are discussed in Chapter Five. The procedure is repeated on a new data set, in which changes are made to portfolio cash flows to reduce portfolio delta values to very low levels. This is engineered by the addition of a new swap into the portfolio at instant time t = 0, of equal face value but opposite in sign to the existing swap. The pricing methodology is identical to the initial swap and the term structure rates in this case are the same. Once again, $V_1, V_2, \ldots, V_{T-1}$ and $a_1, a_2, \ldots a_{T-1}$ are derived to assess portfolio income under alternative rules. Tests for correlation between income under the alternative rules are conducted again, in a manner similar to that done earlier and the two sets of coefficients are compared for possible changes. The proportion of 'current' and 'non-current' income in overall economic income, and its relationship to the implied portfolio volatility measures is also examined for both the single swap portfolio with no conditions set on portfolio volatility and for the two-swap portfolio in which volatility is controlled by the introduction of appropriate new cash flows. Tests for correlation are carried out using the Ordinary Least Squares regression technique.

Simulation Exercise 4.3 is identical to the previous Exercise in most respects. Again, the focus is on comparing income outcomes under alternative rules and the impact of a changing implied volatility on such outcomes as well as on changes in composition of economic income. There are two significant differences however, to the previous Exercise. These are (i) The portfolio initially consists of eight interest rate swaps. These swaps are of varying face value and maturity and are selected at random. Once net portfolio cash flow composition is determined it remains unchanged to maturity. (ii) Portfolio delta is controlled by a selection of stochastic processes on term structure curves that are determined in advance. To determine the set of term structure curves and the stochastic processes to be followed at which portfolio delta ----> 0 at time t-1, the following methodology is used:

The value of a portfolio with a single swap instrument is determined by equation (1) as follows:

$$V_{t-1} = \frac{c}{1+R_{0t}} + \frac{c}{(1+R_{1t})^2} + \ldots\ldots + \frac{c+1}{(1+R_{T-1,t})^T}$$

This can be generalised to the valuation of a multi-swap portfolio with random cash flows as:

$$(39) \quad V_{t-1} = \frac{x1}{1+R_{0t}} + \frac{x2}{(1+R_{1t})^2} + \ldots\ldots + \frac{xT}{(1+R_{T-1,t})^T}$$

where x1, x2,....,xT are the set of cash flows consisting of different coupon and principal flows on individual swaps. These flows could also be of opposing signs. The value of portfolio delta at t-1 approaches zero, if and only if:

$$(40) \quad dV_{t-1} / dR_{0t} = \frac{-x1}{(1+R_{0t})^2} \text{ -----> } 0$$

$$(41) \quad dV_{t-1} / dR_{1t} = \frac{-2(x2)}{(1+R_{1t})^3} \text{ -----> } 0$$

$$\vdots \qquad\qquad \vdots$$

$$(42) \quad dV_{t-1} / dR_{T-1,t} = \frac{-T(xT)}{(1+R_{T-1,t})^{T-1}} \text{ -----> } 0$$

A solution for $R_{0t}, R_{1t}, \ldots\ldots, R_{T-1,t}$ may be found if:

$$(43) \quad \frac{-x1}{(1+R_{0t})^2} = \frac{-2(x2)}{(1+R_{1t})^3} = \ldots\ldots = \frac{-T(xT)}{(1+R_{T-1,t})^{T-1}} \text{ ---> } 0$$

This methodology may be repeated for successive time periods to find

the set of zero term structure rates at each time period to constrain portfolio delta to levels close to zero.

In reality, the task of finding zero term structures when x1,x2,.....,xT are random, is considerably complicated, although such solutions exist. The possibility of negative rates is real in such situations in which cash flows may possibly be of opposing signs. The best approach is the 'trial and error' method to finding a set of term structures at each period that represent approximate solutions to equation (43). An additional further constraint has been imposed which requires the one set of term structure rates to yield both daily as well as six-monthly data. t is now measured in terms of 0,1,2,..,365T days as well as 0,1,2,..,T semi-annual periods to yield one set of term structure rates. This narrows the range of the stochastic processes to be followed by the set of term structures rates considerably, and makes the task of finding such rates by the 'trial and error' basis somewhat easier. Six-monthly data is examined in the Simulation Exercise 4.2, because of the match between the period length and the coupon payment dates in the portfolio. The desire to present daily data as well, is motivated by the need to perform statistical tests on a much larger sample size to that presented in the Simulation Exercise 4.2, as well as the desire to present results on a basis that highlight real-life industry based income assessment procedures. To achieve some sort of consistency in results between a database containing semi-annual flows and its daily equivalent therefore, requires us to at least impose the sort of constraints that have been described above.

The desire to present daily results would ordinarily generate problems. With t being both a daily and six-monthly unit of time measurement, the methodology to be followed in equation (43), would need to be re-worked daily. With the portfolio in Exercise 4.3 maturing in 6.25 years for instance, the derivation of the complete zero term structure set to value cash flows daily, from time t = 0 to maturity, means having to derive $\{R_{0t}, R_{1t}, R_{2t}, .., R_{T-1,t}\}, \{R_{0t+1}, R_{1t+1}, .., R_{T-2,t+1}\}$ $, ..., \{R_{0T-1}\}$, representing a total of approximately 2.65 million calculations. Apart from problems with storing such a database, the exercise is simply not feasible in terms of time spent and the overall object of this exercise. Consequently, a constraint is imposed on the particular stochastic process to be followed by the term structures derived at each period from period 1 onwards, such that the zero rates at time t = 2, $\{R_{0,2}, ..., R_{T-2,2}\}$ follow a pre-determined path in which $R_{0,2} = R_{1,1}$, $R_{1,2} = R_{2,1}$, to $R_{T-2,2} = R_{T-1,1}$, where $\{R_{1,1}, R_{1,2}, ..., R_{T-1,1}\}$ represent the set of zero term structures derived at instant t = 1, to period t = 3, where $R_{0,3} = R_{1,2}$, $R_{1,3} = R_{2,2}$ etc. etc..... This leads to the performing of a far fewer

set of calculations to satisfy conditions imposed by equation (43). The stochastic process thus selected in Exercise 4.3, is not distinguished from any other process, except that it minimizes the number of calculations that need to be performed in deriving an entire set of daily as well as six-monthly term structure rates.

Once this is done, six-monthly and daily results are presented for both the initial portfolio set in which portfolio volatility is uncontrolled as well as for the second portfolio set in which portfolio volatility is controlled as a result of the pre-determined stochastic process followed by the set of zero term structures. Tests for correlation are conducted using Ordinary Least Squares Estimation, between economic income derived from the proposed model and income assessed under the due and receivable basis, for both cases. Tests for correlation are also conducted between the proportion of current income in overall income and overall implied portfolio volatility, consisting of delta and theta values. The regression analysis is also conducted on the case where portfolio is purposely controlled and for the case where it is not. The test results are presented for both daily and six-monthly data.

Simulation Exercise 4.4 utilises portfolio cash flows from Exercise 4.3 and applies the methodology employed in earlier Exercises. The focus of this Exercise however, is to examine the effects of a stationary term structure on income assessments under alternative rules, and the effect on overall economic income in terms of the split between current and non-current income. Only the time to expiry moves continuously and non-stochasticity is defined in Section 3.2 in terms of unchanged values of both spot and one-period implied forward rates as real time moves on one period. The overall portfolio results are generated on a six-monthly and daily basis. Ordinary Least Squares Estimation is used to examine changes in correlation between income assessed under alternative rules and the proposed model. The tests are also conducted to examine changes in the relationship between relative composition of current and non-current components in overall economic income and implied point portfolio volatility. The regression analysis is conducted on both semi-annual and daily data.

Exercise 4.5 is the final in the series to be conducted. The Exercise uses the swap cash flows from Swap One in Exercise 4.3 and generates income under alternative rules from three independent term structures. The first term structure set is taken from Exercise 4.3 and follows a stochastic process under which no bounds are placed on portfolio volatility. The next two term structure sets, although independently derived from each other, follow a pre-determined stochastic process under which portfolio delta is constrained to approach zero. The object in this Exercise is to examine the impact of low implied volatility on income from a single swap with uniform cash flows, where movements in implied volatility are controlled by movements in term structure rates. The Exercise shows results, which on first impressions, are somewhat at odds with those in Exercise 4.3 for the multi-swap portfolio. Hence the need to construct two instead of one database for the low volatility single-swap portfolio so that one set of

results can be used to verify the conclusions resulting from the other to ensure that neither is biased to the particular set of term structures used. The two sets of term structures that constrain implied volatility to zero are independently derived and show that the solution to finding such term structures is not unique. The first set of term structures to constrain implied volatility is derived using the methodology in equations (39) - (43). The second set is derived by the trial and error basis.

3.4 Conclusion:

The model provides an income assessment methodology with portfolio risk as a major consideration. This leads to a rethinking on the formulation of tax policy based on concepts and ideas that constitute a radical departure from those adopted in the past. At the very least, the decomposition of income flows into the two components opens up the way for possible differential tax treatment of income. This may either be in the form of different sets of marginal tax rates for the two components or a differential treatment of carry forward losses arising from the two components. Such policy considerations also partially help overcome problems incurred in taxing 'unrealised' gains and losses under marked to market, as these gains and losses are now split into more than one component. Further work would need to consider the practical and theoretical problems entailed in taxing unrealised gains and losses, in light of the income definitions established in this study, as well as the overall impact of such radical changes to tax policy on macroeconomic variables such as government fiscal policy.

CHAPTER FOUR

DATABASE

4.1 INTRODUCTION:

This Chapter is divided into four sections (4.2 - 4.5), and is primarily involved in setting up databases on the Simulation Exercises performed on four individual sets of portfolio cash flows. The database in each case, consists of income assessed under the alternative rules that are in use or proposed, and the model. The data set also includes relative current and non-current income in overall economic income in the proposed model and values for portfolio delta and theta.

Each section itself, is divided into two areas of study. These are: (i) the assessment of income under alternative rules, and the degree of correlation among the different rules, for the case of portfolio cash flows with randomly generated volatility, and (ii) the assessment of income under alternative rules, and the degree of correlation among the different rules, for portfolio cash flows with minimal volatility. Volatility is defined in terms of delta and theta values of a given portfolio of cash flows at any instant time from t = 0 to maturity. Delta and theta values are altered by either (i) continually making adjustments to existing portfolio cash flows (by adding swaps of varying face values and maturity), or (ii) by controlling the stochastic processes on the underlying term structure rates that provide the valuation on a given portfolio.

Portfolio volatility is the determining criteria in defining the terms of reference of this study. This is because the ultimate objective of the study is to determine whether the proposed model (and implicitly, the marked-to-market basis) dominate the cash-based methods in assessing income. The debate in the professional literature has attempted to differentiate the cash-based rules from the marked-to-market rules in terms of accepting the former to assess income from 'hedge' portfolios while accepting the latter to assess income from 'trading' portfolios. In the absence of an appropriate definition as to what constitutes 'trading' and hedging' income (for a discussion on this refer to Chapter Two), the professional literature has had significant problems in coming to grips with the core issue of what constitutes income from financial instruments. This study has attempted to use an objective measure of risk based on the volatility of a portfolio, to decide what constitutes a 'trading' or hedging' portfolio.

The portfolio set in Exercise 4.2, consists of cash flows from a single interest rate swap. The income data derived is based on movements in term structures that follow an arbitrarily selected stochastic process. Once the data is derived, portfolio cash flow composition c is altered to reduce portfolio delta values to approach zero at each instant t = 0 to

maturity. This is achieved by introducing new cash flows into the portfolio at time t=0 itself to make a once-and-for-all alteration to existing cash flows c. The new cash flows eminate from a second interest rate swap of equal face value but opposite in sign. A second set of income data is then derived based on the earlier stochastic processes on term structure rates.

Simulation Exercise 4.3, extracts income from a portfolio set of eight swaps of varying maturities and face values, picked at random. Two data sets are derived for analysis. The first set relates to assessments on portfolio income based on an arbitrarily selected stochastic process on the term structure curves with no constraints placed on portfolio delta. The data set derived on portfolio income is presented on both a six-monthly and daily basis. The second data set relates to the assessment of portfolio income based on a pre-determined stochastic process on term structure curves to constrain portfolio delta to approach zero at each instant t = 0 to maturity. Again, the data set on portfolio income is presented on both a six-monthly and daily basis. The daily results provide a much larger sample size for OLS regression analysis.

Simulation Exercise 4.4, takes the portfolio cash flows from Exercise 4.3, but derives income under alternative rules based on a set of non-non-stochastic term structures. The set of zero rates at time t = 0, are are also taken from Exercise 4.3, which then follow a stationary process to maturity. Non-stochasticity of term structures is defined earlier in Chapter Three. There is no attempt to constrain portfolio delta in this Exercise because the object is to study the impact of stationary term structures on income assessments under alternative rules as well as on portfolio delta and theta. Any changes in portfolio delta or theta may in turn, influence changes in the relative composition of current and non- current income in overall economic income. The data set on portfolio income is presented on both a six-monthly and daily basis.

The final in the series is Exercise 4.5. The data set in this Exercise, comprises of the cash flows from a single interest rate swap. The swap is taken from Exercise 4.3 and represents Swap One in the portfolio. Three six-monthly sets of data are produced for regression analysis. The first set relates to the assessment of income under an arbitrary stochastic process on term structure curves in which swap delta is not controlled. The stochastic process and the set of term structure rates are taken from the first data set in Exercise 4.3. The next two six-monthly data sets are derived under term structures that follow particular stochastic processes to constrain swap delta to approaching zero at each instant t = 0 to maturity. The derivation of two instead of one database in this case, reflects the fact that solutions to term structure rates that yield extremely low portfolio delta at each instant t = 0 to maturity, are not unique to one set of term structures. This enables us to have more than one set of data to study the behaviour of income and other key variables such as the the proportion of current and and non-current income in overall economic income for portfolios with extremely low delta values. The advantages are that results under the two sets of data may be compared for consistency and possibe bias towards the set of term structure rates used. The case of the single interest rate

swap and its behaviour under conditions of low delta, is highlighted because unlike Exercise 4.4, which consists of a number of swaps with varying notional principal and coupon flows, a single swap with uniform cash flows makes it possible to show clearly the behaviour of delta and theta through time and how they impact on swap income. With a multi-swap portfolio, this task becomes far more difficult because of the number of individual swap maturities, and varying coupon rates and principal flows. Neverthless, the case of a multi-swap portfolio is of equal importance because the particular tax rule chosen, must be able to assess overall portfolio income correctly regardless of the number of securities in the portfolio if it is to meet the simplicity as well as neutrality and efficiency criteria. The methodology chosen in Exercise 4.5 differs from that in Exercise 4.2 for the single swap case with delta constrained by movements in term structure rates instead of by changes in portfolio cash flow composition.

Six-monthly datasets for the above simulated examples are presented in Appendix Four and the equivalent daily dataset tables are presented in Appendix Five.

In Chapter Five a series of statistical tests are conducted in each data set, to establish the level of correlation (a) between economic income and income assessed under 'realisation' based methods such as the due and receivable and straight line accruals, and (b) between the proportion of current and non-current income in overall economic income, and portfolio delta and theta. Because of the number of regressions to be run and the nature of the tests, the regression work is divided into Sections 5.3 and 5.4. Section 5.3 examines the results produced by regressions in (a) for Exercises 4.2-4.5, while Section 5.4 examines the results from regressions in (b) for Exercises 4.2-4.5. The nature of the statistical tests to be performed as well as final results and conclusions are also presented in Chapter Five.

4.2 SINGLE INTEREST RATE SWAP PORTFOLIO:

At time t = 0, a single interest rate swap is introduced into the portfolio. Details of the swap are as follows:

Notional Principal: A$ 100,000,000.00
Coupon Rate : 9.8% per annum, semi-annually in arrears.
Start date : 30 June 1995.
Maturity date : 30 June 1998.

A set of zero term structure rates beginning each semi-annual period from time t=0 to T-1 are selected at random in Table 4.2 (A) (Appendix Four) with the constraint that the term structure zero rates as at time t=0 must yield an initial value of par on the swap. Thereafter, the zero term structure rates follow a randomly selected stochastic process to maturity at each period. The constraint relating to the zero term structure rates at time t=0 is shown more formally below in Table 4.2.

TABLE 4.2

AS AT 30/06/95

Date	Swap Fixed Flows $ 000	Swap Float Flows $ 000	Net Portfolio Flows $ 000	Zero Rates	V_t $ 000
06/30/95	(100,000)	100,000	0	5.5759	0
12/30/95	4,913	(103,425)	(98,511)	6.8307	(95,249)
06/30/96	4,913		4,913	7.8255	4,549
12/30/96	4,913		4,913	8.6290	4,327
06/30/97	4,887		4,887	9.2838	4,074
12/30/97	4,913		4,913	9.6006	3,885
06/30/98	104,887		104,887	9.9260	78,413
	9.8000	6.8307		Net V_t :	(0)

The swap fixed cash flows are derived at the semi-annual par rate of 9.8%. The swap one-period floating cash flow is derived using the first six-monthly zero rate of 6.8307% from Table 4.2 (A). The formula used to derive the fixed and floating coupon flows is as follows:

$$(1)\ \text{Coupon Flow} = \frac{\text{Interest Rate}}{100} * \frac{\text{Actual No. of days in a semi-annual period}}{365} * \text{Notional Face Value}$$

As an interest rate swap represents an exchange of fixed and floating rate obligations, this is equivalent in cash flow terms to saying that an interest rate swap represents a borrowing at one set of rates (fixed or floating) and a lending in another. Consequently, notional principal flows are also included in the valuation process in the above Table to yield a Net Present Value of zero for the swap at time t=0. As each six-month period elapses, the six-monthly zero rate corresponding to the particular period is used to derive the successive one-period floating rate cash flows. In a particular semi-annual time period, the difference between the fixed coupon and the corresponding floating coupon (after netting the notional principal amount) yields a $_t$. This also represents income under the due and receivable basis. Marked-to-market income and the overall economic income from the proposed model (both are identical) is derived in period t on the following basis:

$$(2)\ \text{Marked-to Market Income (period t)} = V_t - V_{t-1} + a_t$$

where V_t represents the net present value of the portfolio at time t, V_{t-1} represents the net present value of the portfolio at time t-1, and a_t represents 'realised income' in period t. Both V_{t-1} and V_t are derived from equations (1) and (2) respectively in Chapter Three, while a_t is defined in Equation (3) in Chapter Three.

The constraint regarding the selection of the initial set of zero term structure rates to yield a zero net present value for the swap is a necessary one because par rates are derived from a set of corresponding zero coupon rates. This means that a set of fixed swap cash flows derived from the par swap rate must equate in present value terms to a set of swap cash flows derived from the corresponding set of zero coupon rates. For a detailed look at the methodology used to derive par from zero rates (or vice-versa), refer to Appendix Two. A data set comprising of income assessments under each of the three alternative rules and the proposed model on a semi-annual basis is derived. This is shown in Tables 4.2 (B) of Appendix Four. Table 4.2 (C) which is also in Appendix Four, derives the accompanying delta and theta values for the portfolio.

Portfolio delta refers to the sensitivity of the value of a portfolio to a shift in the underlying yield curve. More formally, portfolio delta at instant time t is derived as follows:

$$(3)\quad \text{Delta}(t) = V_t(\text{zero rates}) - V_t(\text{zero rates} - 0.01)$$

Portfolio theta refers to the change in value of a portfolio due to a unit shift in time. More formally, portfolio theta at instant time t is derived as follows:

$$(4)\quad \text{Theta}(t) = V_t(\text{zero rates}) - V_{t-(1\text{ day})}(\text{zero rates})_{t-(1\text{ day})}$$

As described in Chapter Three, the day effect creates a shift not only in the unit of time (pure time decay), but also creates changes to the zero rates used (yield curve slope effect). In the simulated examples presented throughout this Chapter however, portfolio theta values are in some cases unusually large because of the assumption of the shape of the yield curve to be in a 'step-wise' form. This means that actual rates make an instantaneous change only at the end of each semi-annual period and remain constant thereafter for the entirety of the semi-annual period. This therefore exaggerates the t - (1 day) slope effect on the yield curve.

Table 4.2 (B) also records the series of one period six monthly zero rates (r_t). These represent the series of actual first six-monthly

zero rates that are used to calculate the actual one-period six monthly floating rate cash flows on the swap. These rates are taken from Table 4.2 (A). These rates are also used in the derivation of the relative components $(r\ V_{t\ t-1})$ and y_t in overall economic income from the proposed model for each six-monthly period given in Table 4.2 (C). The process followed is to derive $(r\ V_{t\ t-1})$ and total marked-to-market income from the available dataset. Once this is done, equation (15) in Chapter Three is used to derive y_t.

On first impressions, one notices identical assessments on income produced by the due and receivable and the straight line accruals rules in Table 4.2 (B). This is to be expected as the measurement interval on which the straight line accruals is based on, is identical to the semi-annual basis on which net cash flow receipts and payments are made. The latter is the time interval on which due and receivable income is assessed. A further point that becomes apparent on first impressions, is the identical assessment on net total income under all three outcomes. This is denoted under the 'Net' column in Table 4.2 (B). The impression is somewhat misleading, although unavoidable. It is misleading because the totals in the 'Net' column do not reflect accumulation of interest on net receipts and payments made each period. This is unavoidable however, because there is no interest accumulated on the unrealised component of mark to market income. It is therefore assumed, as it is under all other assessments, that all such interest income is passed to a separate account, and the totals therefore represent only a simple sum of the income flows in a particular column. In Chapter Three, this assumption has also been necessary for the derivation of the proposed model.

Ordinary Least Squares Estimation is used to establish the correlation (i) between overall economic income assessed under the proposed model, and income assessed under the due and receivable (or alternatively, the straight line accruals), in Table 4.2 (B), (ii) between the proportion of $r\ V_{t\ t-1}$ in overall economic income and portfolio delta and theta.

The portfolio results are derived again, but this time with the introduction of an additional swap of equal face value but opposite in sign at instant $t = 0$, to place constraints on the delta of the portfolio. This effectively 'closes out' the original swap position to yield a series of uniform cash flows across the time grid (gain or loss margin). The case might not be an interesting one, but is necessary to highlight because portfolio delta is at a minimum only when all portfolio outstanding positions are 'closed out'. The assumption made in this example is that the original swap position is 'closed out' at time $t = 0$ itself so that there are no 'time value' effects on valuation. The portfolio at time $t = 0$ now comprises of the cash flows from the following swaps:

(1) Notional Principal: A$ 100,000,000.00
Coupon Rate : 9.80% per annum, semi-annually in arrears.
Start date : 30 June 1995.
Maturity date : 30 June 1998.
Investor receives fixed coupons and makes a series of floating rate payments.

(2) Notional Principal: A$ 100,000,000.00
Coupon Rate : 9.60% per annum, semi-annually in arrears.
Start date : 30 June 1995.
Maturity date : 30 June 1998.
Investor pays a series of fixed coupons and receives floating rate payments.

The results are derived in the same manner by using the same set of term structures in Table 4.2 '(B) and Table 4.2 '(C) in Appendix Four.

The large initial income recorded under y_t at time t = 0, is indicative of the fact that the second swap is not priced to sell at par. Therefore, an up-front amount, representing the difference between par and the actual price on the swap, changes hands to compensate the buyer of the swap. Note the difference in portfolio deltas between Table 4.2 '(C) and Table 4.2 (C). Ordinary Least Squares Estimation is used in (i) between economic income and due and receivable income in Table 4.2 '(B), and (ii) the proportion of $r_t V_{t-1}$ in total economic income and portfolio delta and theta.

4.3 MULTI-SWAP PORTFOLIO - SIMULATION EXERCISE A:

At time t = 0, eight randomly selected interest rate swaps are introduced into a portfolio. Details of the swaps are as follows:

(1) Notional Principal: A$ 113,700,000.00
Coupon Rate : 11.7492% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Dec. 2000.
Investor receives fixed coupons and makes a series of floating rate payments.

(2) Notional Principal: A$ 140,000,000.00
Coupon Rate : 9.2000% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Sept. 1996.
Investor receives fixed coupons and makes a series of floating rate payments.

(3) Notional Principal: A$ 30,000,000.00
Coupon Rate : 13.054% per annum, semi-annually in arrears.

Start date : 30 Sept. 1996.
Maturity date : 30 March 1999.
Investor pays a series of fixed coupons and receives floating rate payments on a forward-start swap.

(4) Notional Principal: A$ 35,000,000.00
Coupon Rate : 10.6000% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Sept. 1998.
Investor pays a series of fixed coupons and receives floating rate payments.

(5) Notional Principal: A$ 20,000,000.00
Coupon Rate : 9.4975% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 March 1997.
Investor pays a series of fixed coupons and receives floating rate payments.

(6) Notional Principal: A$ 250,000,000.00
Coupon Rate : 11.9000% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Sept. 2000.
Investor receives fixed coupons and makes a series of floating rate payments.

(7) Notional Principal: A$ 550,000,000.00
Coupon Rate : 9.2000% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Sept. 1996.
Investor pays a series of fixed coupons and receives floating rate payments.

(8) Notional Principal: A$ 750,000,000.00
Coupon Rate : 15.5530% per annum, semi-annually in arrears.
Start date : 30 March 1999.
Maturity date : 30 Sept. 2000.
Investor pays a series of fixed coupons and receives floating rate payments on a forward-start swap.

The selection of the term structures in this Exercise, is based on a different methodology to that employed in the previous Exercise. The selection procedure employed, is based on a generation of the zero term structure rates such that the zero rates at time t = 0, yield a value of par on each of the eight swaps in the portfolio. Thereafter, at time t = 1,2,.....,T, the zero rates follow a stochastic process such that at time t = 1, $R_{0t+1} = R_{1t}$, $R_{1t+1} = R_{2t}$ etc. etc.. Both spot and forward rates change as real time moves on one period, and in that sense the stochastic process is one from an infinite set of such processes. The process is selected because of the considerable ease it presents in producing daily results. The resulting set of zero term structure rates

are in Table 4.3 (A) in Appendix Four. The particular stochastic process selected on the term structure rates is one that places no constraints on portfolio volatility. Thus, in the results presented in Tables 4.3 (B) and (C) (both in Appendix Four), delta values remain unbounded.

Portfolio results on a daily basis are presented in Table 4.3 (D) in Appendix Five. The daily results require assumptions to be made on term structure rates that fall within the semi-annual dates in Tables 4.3 (B) and (C). To be consistent with the semi-annual term structures and the stochastic process followed to derive semi-annual data, the term structure curve at each instant time t is assumed to be sloping in a 'step-wise' manner instead of in a smoothly upward or downward sloping fashion. This removes the need to make assumptions regarding interpolation of daily rates and gives results consistent with semi-annual data. However, this also gives unusually large values for daily theta in cases where term structure rates are seen to be making often very violent and substantial shifts at day - end at the end of a six month period. Both semi-annual and daily results are used to test for correlation in (i) between straight line accrual and total economic income, and (ii) between portfolio delta and theta, and the proportion of current income in total economic income For regression analysis concerning the use of daily data in (i), straight line accrual income is used as a proxy for due and receivable income because both are based on the concept of 'realised' income, and therefore similar in nature. The use of due and receivable data poses significant problems in OLS esimation here because there are only 12 observations for due and receivable data compared to 2192 observations on economic income and straight line accrual income data.

The derivation of the various variables in Tables 4.3 (B) - (D), is based on the methodology described in Chapter Three and in Section 4.2 above. The difference between Section 4.2 and 4.3, if it can be called such, is that in Section 4.2, income under the three basis is derived for the case of a single interest rate swap whereas in Section 4.3, there exists a multi-swap portfolio. For the multi-swap portfolio, the derivation of income under the cash-based 'realisation' methods such as the 'due and receivable' and 'straight line accruals' basis, requires consideration of the fixed and one-period floating cash flows of individual swaps which are then aggregated across each time period. For calculating 'marked-to-market' income however, one needs to know only the net portfolio cash flow exposure to the yield curve. The net portfolio cash flow exposure is simply derived by netting all fixed swap flows across each time grid. These are then discounted to the present at the appropriate zero term structure rates to yield portfolio V.

4.3 MULTI-SWAP PORTFOLIO - SIMULATION EXERCISE B:

The next data set comprises of the same swap portfolio as Simulation Exercise A. The object of the exercise here however, is to obtain a set of income assessments under the three established rules and the proposed model, to assess income with the constraint of portfolio delta approaching zero in successive time periods from time t=0

to maturity. Portfolio delta values are constrained to approaching zero in successive time periods by selecting an appropriate stochastic process on term structure rates at each period from time t = 1 to maturity. The values for portfolio delta are in Table 4.3 '(A). The 'trial and error' approach is used here for the selection of this particular stochastic process although a more formal methodology to derive such processes on term structure rates is discussed in detail in Chapter Three (refer equations 38-42).

The set of term structures at time t = 0, are taken from the previous data set in Exercise 4.3 to yield portfolio V = 0. The zero rates R_{0} then make a random violent shift at time t = 1 and follow a stochastic process thereafter at time t = 2 in which $R_{2,0} = R_{1,1}$, $R_{2,1} = R_{1,2}$ etc. where $\{R_{2,0}, R_{2,1}, \ldots\}$ represent the zero term structures at time t = 2, and $\{R_{1,1}, R_{1,2}, \ldots\}$ represent the set of zero term structures at time t = 1. The stochastic process itself, is identical to that used in the previous data set in Exercise 4.3, although the zero rates are different. As with the previous data set however, both spot and forward rates change as real time moves on one period and therefore the stochastic process represents one from an infinite set of such processes. The daily term structure curve at each instant time t = 0 to maturity, is assumed to be shaped in a 'step-wise' fashion, as is the case in the earlier data set. The semi-annual results are presented in Tables 4.3 '(B) and '(C) in Appendix Four and the equivalent daily results are presented in Table 4.3 '(D) in Appendix Five. The methodology that is used in deriving the income assessments under the various rules and other variables to be used in the regression work later, is identical to that used in the earlier Simulation Exercises. Again, Ordinary Least Squares is used to test for correlation in (i) between due and receivable income and overall economic income, and (ii) between the proportion of current income ($r V_{t-1}$) in overall economic income and portfolio delta and theta. For regression analysis in (i) on the daily data set Table 4.3 '(D), straight line accrual income is used as a proxy for due and receivable income. This is proposed for the same reasons as for the previous daily data set.

4.4 TIME VALUE AND THE ASSESSMENT OF INCOME FROM A MULTI-SWAP PORTFOLIO:

This next simulation examines the impact of stationary term structures on portfolio value and the assessment of income under alternative rules. Also examined are the impact of stationary term structures on portfolio delta and theta and their impact on the composition of current and non-current income in overall economic income. The portfolio swaps and the term structures at time t = 0, are taken from Exercise 4.3. Non-stochasticity of term structure rates is defined such that at time t = 1, $R_{0,1} = R_{0,0}$, $R_{1,1} = R_{1,0}$ etc. etc. where

$\{R_{0,1}, R_{1,1}, \ldots\ldots\}$ are the zero rates at time t = 1 and $\{R_{0,0}, R_{1,0}, \ldots\}$ represent zero rates at time t = 0. Therefore, as real time moves on one period, both spot and the one-period forward rates remain unchanged. The daily term structure curve at each time t = 0 to maturity is assumed to be shaped in a 'step-wise manner', as is assumed with earlier Exercises. The zero rates are shown in Table 4.4 (A) in Appendix Four. As with the earlier Exercises, OLS is used to test for correlation in (i) between due and receivable income and overall economic income under the model, in Table 4.4 (B) (Appendix Four), and (ii) between the proportion of current income ($r_t V_{t-1}$) in overall economic income and portfolio delta and theta, presented in Table 4.4 (C) (also in Appendix Four). The daily data set is presented in Table 4.4 (D) (Appendix Five) and as with earlier daily data, straight line accrual income is used as a proxy for due and receivable income for regressions in (i).

4.5 ZERO DELTA AND THE ASSESSMENT OF INCOME FROM A SINGLE SWAP -

The nature of the analysis in Exercise 4.5 is identical to that conducted in Exercise 4.3 in particular. Again, a set of cash flows at time t = 0 are generated of a fixed maturity, and income is assessed under all three alternative rules and the proposed model from the cash flows' inception to maturity. This is done using a set of term structure rates to follow certain stochastic processes ranging from a random set of rate movements to specific movements in term structure rates with the objective of constraining portfolio delta values. The methodology used in deriving the set of variables used for the regression work later in Chapter Five, is also identical to that used in the earlier Exercises and described in Chapter Three.

The objective of Exercise 4.5 however, is twofold: (a) to obtain a set of results that may be compared against the results and conclusions of the earlier Exercises, and with Exercise 4.3 in particular. (b) to make assessments of income from a single interest rate swap with uniform flows. This is essential because any model proposed for this study must be consistent in results and conclusions for both the case of a single security as well as a portfolio of securities. Indeed, one of the many criticisms levelled at cash-based methods such as the 'straight line accruals', are that they can only be used to make assessments of income from individual securities. Where a portfolio of cash flows are involved, as they almost always are, then the portfolio would need to be decomposed into its individual securities so that methods such as 'straight line accruals' can be used. The objective of Exercise 4.5 however, is much more than to just see that it can show consistent results using both a single security and a portfolio approach. In so doing, the results also demonstrate their independance to the set of cash flows in a particular portfolio or to the set of term structure rates and the stochastic processes presented in the various Simulation Exercises.

Exercise 4.5 consists of three simulation exercises conducted

on the cash flows from a single interest rate swap. The swap cash flows used are taken from Swap One in Exercise 4.3 and its income is generated under the three rules and the proposed model from three independant processes on a term structure curve (hence, three independant simulation exercises). The term structure curve at time t = 0 is identical to all three exercises and is taken from Table 4.3 (A) (Appendix Four). The term structure rates from time t = 1 on to maturity differ markedly from each other depending on the stochastic process that they follow. The stochastic process followed in Exercise A is rather arbitary to place no constraints on portfolio delta values. In Exercises B and C however, the stochastic processes to be followed on the term structure rates are pre-determined to yield extremely low values for portfolio delta. Looking at the very different set of term structure rates in Exercise B and C suggests that the solution to a set of such rates to yield a set of continually low portfolio delta values, is not unique to one set of term structure rates. As a result, both Exercises B and C have been undertaken (instead of just one) in order to be able to verify the conclusions of one simulation exercise from the other to ensure that the results and conclusions in this study are not biased towards a particular stochastic process on term structure rates. The set of term structure rates in Exercise B and C are independantly derived. The stochastic process in Exercise B is formally derived using the methodology in equations (38) - (42) in Chapter Three while the stochastic process followed in Exercise C is more informally derived by trial and error.

4.5 SIMULATION EXERCISE A:

The swap is Swap One from the portfolio set in Exercise 4.3, details of which are as follows:

Notional Principal: A$ 113,700,000.00
Coupon Rate : 11.7492% per annum, semi-annually in arrears.
Start date : 30 Sept. 1994.
Maturity date : 30 Dec. 2000.
Investor receives fixed coupons and makes a series of floating rate payments.

The set of term structures from time t = 0 to maturity, are taken from Table 4.3 (A). As in Exercise 4.3, the rates follow an arbitrarily selected stochastic process to yield values for swap delta and theta, and income under alternative rules. The data set are in Tables 4.5 (B) and (C). Using OLS, tests for correlation are conducted in (i) between due and receivable income and overall economic income determined by the proposed model, and (ii) between the proportion of current income ($r_t V_{t-1}$) in total economic income and swap delta and theta. Tables 4.5 (B) - (C) are listed in Appendix Four.

4.5 SIMULATION EXERCISE B:

A new set of term structures are selected to generate portfolio income. These term structure rates follow a pre-determined stochastic process to yield zero portfolio delta at each period. The methodology employed to determine these rates is identified in Chapter Three (refer equations (38) - (42)). The set of term structures are in Table 4.5 '(A) and the resulting data set are in Tables 4.5 '(B) and '(C). Using OLS, tests for correlation are conducted in (i) between due and receivable income and overall economic income determined by the proposed model, and (ii) between the proportion of current income ($r_t V_{t-1}$) in total economic income and swap delta and theta. Tables 4.5 '(A) - '(C) are listed in Appendix Four.

4.5 SIMULATION EXERCISE C:

The final data set for Exercise 4.5, comprises of income assessments from the single swap, based on a second set of term structures that follow a pre-determined stochastic process to yield zero portfolio delta at each instant time t. The data set obtained is used as a second database, results from which can be directly compared with those in Tables 4.5 '(B) and '(C), to ensure that one set of results are not biased to the particular set of term structures used. The term structure rates in Table 4.5 ''(A) are derived independantly from the rates in Table 4.5 '(A). The rates are derived using the 'trial and error' method, but yield similar results in terms of portfolio delta values. The data set are in Tables 4.5 ''(A), ''(B) and ''(C) in Appendix Four.

The differences in portfolio delta values between Tables 4.5 '(C) and ''(C) on the one hand, and Table 4.5 (C) on the other, may be noted. Using OLS, tests for correlation are conducted in (i) between due and receivable income and overall economic income determined by the proposed model, and (ii) between the proportion of current income ($r_t V_{t-1}$) in overall economic income, and portfolio delta and theta.

4.6 CONCLUDING COMMENTS:

The basis of the study in this thesis is to examine the behaviour of income assessed under the variety of rules currently in use or proposed for both the 'hedging' and 'trading' portfolio case. This 'purpose-led' approach is one that has been employed by the professional literature as a key criteria in determining which rule should be adopted for which purpose. This study attempts to standardize concepts such as 'trading' and 'hedging' into their common denominator based on the volatility of a given portfolio of cash flows. This means that if two portfolios have an identical payoff and volatility matrix, then the income and risk assessments made on both portfolios should also be identical.

The idea of evaluating portfolio income for taxation purposes, based on the relative risk characteristics of its income stream, adds a new dimension to the current debate in this area. In proposing this idea however, the study runs into several areas of difficulties, some of which relate to the construction of the database. These are (i) the use of an appropriate index to measure portfolio volatility. This is perhaps the most contentious of areas because of the absence of any general consensus in finance theory and practice on a single definition of volatility. As mentioned in Chapter Three, volatility has come to be defined in a number of ways in finance ranging from an estimation of the volatility of future returns based on a history of the volatility of past returns, to more abstract concepts based on the actual sensitivity of portfolio returns to movements in the underlying parameters that determine the price of that portfolio. The topic itself is a matter for debate and is currently one that many financial institutions are grappling with in trying to identify their actual risk exposures and defining the appropriate limit structure to monitor such exposures (the debate in this area is about evaluating the merits of deriving a 'Value At Risk' exposure versus other types of exposures derived from 'stress testing' or 'scenario analysis' of portfolio income. The different exposure types relate to the differences in the concept used to derive volatility. To gain familiarity with this area, one should refer to the various publications put out by J.P. Morgans Bank, and the BASLE Committee on the evaluation of 'Value At Risk").

In selecting a definition of volatility that is consistent with deriving a 'scenario analysis' risk exposure, the simulation exercises in this study run into further problems when stochastic processes on term structure rates are selected to control portfolio volatility. This is because portfolio volatility is defined in terms of two moments (delta and theta). The stochastic processes selected are only able to constrain delta values at any given instant and the theta values are then derived as a consequence. Theta values can only be constrained for the uninteresting case of portfolio cash flows being minor (such as in Table 4.2 '(B) and '(C)), or in the case where the term structure curve remains stationary and flat from time t = 0 to maturity. The stochastic processes selected in the simulation exercises do not exhibit a flat term structure. Even in Simulation Exercise 4.4, where the term structure curve is stationary from time t = 0 to maturity, the curve is positively sloped thereby yielding significant values for theta.

The next problem to be discussed in the construction of the data set is (ii) the shape of the term structure curve in all Simulation Exercises. This problem specifically refers to the assumption of a 'step - up' or 'step - down' type shape of the term structure curve depending on whether it is positively or negatively sloped. The assumption made, abstracts from the real - world scenario of a smoothly sloped term structure curve. While the adoption of a smoothly sloping term structure curve is not expected to significantly affect the final results and conclusions of this study, it will however, give rise to timing differences within periods, for the assessment of income under a given rule. This would also yield slightly different numbers for delta and theta values of a portfolio for a given period. This makes the adoption of a smoothly

sloping term structure curve highly desirable. The problem with adopting such an assumption is that this gives rise to significant problems regarding the interpolation of term structure rates that fall within the semi-annual periods. This specially creates problems for the derivation of the daily dataset numbers in Appendix Five. The adoption of a 'step-up' or 'step-down' assumption regarding term structure rates, removes the need to make additional assumptions on how to smooth a positively or negatively sloping yield curve.

A third problem, and one already discussed, is (iii) the construction of simulated databases for the purposes of such a study, instead of the utilisation of a 'real' database. While it would be ideal to be able to have access to a 'real' database, the necessary derivation of actual income flows from a portfolio's inception to maturity means that it becomes essential to have access to databases that are typically 10 to 15 years old (as the longest maturity for most major currency swaps is 10 years). This becomes problemmatic when it is considered that the concept of 'market-making' and trading in interest rate swap instruments is of fairly recent genesis. Real databases that are current, do not allow actual income flows to be derived because of the significant component of future unknown earnings inherent. One would typically have to make many assumptions regarding future term structure rates and the stochastic processes to be followed, to be able to derive some estimate of future earnings. Once this is done, then it's appeal is no better than creating whole simulated databases for the purpose of this study.

A final criticism that can be levelled at the study is that its scope is limited to the discussion of portfolios that only contain financial flows. The results and conclusions of this study cannot be extended to cases where financial instruments are used to 'hedge' non-financial assets and liabilities. While examples of such cases are commonplace, the problem that is faced here is the lack of market completeness faced in the market valuation of non-financial assets and liabilities. The proposed model and its workings are essentially designed to overcome problems in the assessment of income for treasury type portfolios where the underlying risk is expressed in terms of term structure or foreign exchange volatility and where often, inter-desk transfer of cash-flows attempt to transcend the barriers imposed by definitions such as 'hedge' and 'trading'. This in turn, materially affect the taxation outcome with respect to a portfolio's income stream.

CHAPTER FIVE

RESULTS

5.1 INTRODUCTION:

Overall, there are 22 primary regressions to be run. Depending on initial results, further regression work may be required to deal with problems such as serial correlation etc. Results from such secondary regression work are included, but are not listed in the breakdown given below. The breakdown is as follows:

Simulation Exercise 4.2: 4 regressions.
Simulation Exercise 4.3: 8 regressions.
Simulation Exercise 4.4: 4 regressions.
Simulation Exercise 4.5: 6 regressions.

The regressions from each Simulation Exercise are divided along two sections, corresponding to the two independant hypotheses to be tested for each Simulation Exercise. Hypothesis (i) and the corresponding regression tables in Section 5.3, are summarised as follows:

(i) Hypothesis Proposed And Tested For Section 5.3:

(i) H1: A relationship exists between the correlation among the various alternative rules used or proposed to assess income in a portfolio and the income volatility of that portfolio. The lower the volatility of income, the higher the correlation among the different alternative rules to assess income from the portfolio. Correspondingly, as volatility of income increases, there is progressively less correlation amongst the alternative rules. In such cases, the marked-to-market rule and the proposed model are the only correct basis to evaluate income from the portfolio.

H0: Represents the null hypothesis to H1.

Regression Equation and Tables in Section 5.3:

The regression equation for Section 5.3 tables, is of the form:

$\bar{Y}_t = b0 + b1 * X_t$, where b0 and b1 are the least square estimators of the coefficients (B0) and (B1) of the true equation of the relationship

between the X and Y variables. The X and Y variables are:

$\bar{Y}_t$ = Economic income from the proposed model at each t.

X_t = Due and receivable income (a_t).

The following tables contain regression analysis between:

Table 5.3 (a): Between due and receivable income and economic income, under the proposed model. The database is Table 4.2 (B).

Table 5.3 (b): Between due and receivable income and economic income, under the proposed model. The database is Table 4.2 ' (B).

Table 5.3 (c): Between due and receivable income and economic income, under the proposed model. The database is Table 4.3 (B).

Table 5.3 (d): Between due and receivable income and economic income, under the proposed model. The database is Table 4.3 ' (B).

Table 5.3 (e): Between due and receivable income and economic income, under the proposed model. The database is Table 4.4 (B).

Table 5.3 (f): Between daily straight line accrual income and economic income under the proposed model. The databases are the daily results from Tables 4.3 (D), 4.3 '(D) and 4.4 (D).

Table 5.3 (g): Between due and receivable income and economic income, under the proposed model. The database is Table 4.5 (B).

Table 5.3 (h): Between due and receivable income and economic income, under the proposed model. The database is Table 4.5 '(B).

Table 5.3 (i): Between due and receivable income and economic income, under the proposed model. The database is Table 4.5 ''(B).

(ii) Hypothesis Proposed And Tested For Section 5.4:

(ii) H1: A relationship exists between the relative composition of risk-free and risky income in overall economic income of a portfolio, in the proposed model, and the income volatility of that portfolio. The lower the volatility of income, the higher the composition of risk-free income in overall economic income.

H0: Represents the null hypothesis to H1 ie. there exists no relationship between the level of income volatility for a portfolio and the relative composition of risk-free

and risky income in overall income for the portfolio in the proposed model.

Regression Equation and Tables in Section 5.4:

In Section 5.4, the regression equations each have three regressors (including the constant) and take the following form:

$\bar{Y}_t = b0 + b1 * X_t(1) + b2 * X_t(2)$ where b0 and b1 and b2 are the least square estimators of the true coefficients B0, B1 and B2. The $\bar{Y}_t$, $X_t(1)$ and $X_t(2)$ variables are defined as follows:

$\bar{Y}_t$ = proportion of risk-free income in total economic income from the proposed model ie. $r_{t-1} V_{t-1}$ / total economic income at t.

$X_t(1)$ = portfolio theta value at time t.

$X_t(2)$ = portfolio delta value at time t.

The following tables contain regression analysis between:

Table 5.4 (a): Between percentage of current income ($r_{t-1} V_{t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.2 (C).

Table 5.4 (b): Between percentage of current income ($r_{t-1} V_{t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.2 '(C).

Table 5.4 (c): Between percentage of current income ($r_{t-1} V_{t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.3 (C).

Table 5.4 (d): Between percentage of current income ($r_{t-1} V_{t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.3 '(C).

Table 5.4 (e): Between percentage of current income ($r_{t-1} V_{t-1}$) in total

economic income and portfolio delta and theta. The database is Table 4.4 (C).

Table 5.4 (f): Between percentage of current income ($r V_{t\ t-1}$) in total economic income and portfolio delta and theta. The databases are the daily results from Tables 4.3 (D), 4.3 '(D) and 4.4 (D).

Table 5.4 (g): Between percentage of current income ($r V_{t\ t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.5 (C).

Table 5.4 (h): Between percentage of current income ($r V_{t\ t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.5 '(C).

Table 5.4 (i): Between percentage of current income ($r V_{t\ t-1}$) in total economic income and portfolio delta and theta. The database is Table 4.5 ''(C).

5.2 SUMMARY OF THE STATISTICAL TESTS PERFORMED:

Standard Least Squares Estimation techniques are employed to estimate the regression function in each case. As mentioned earlier, Section 5.3 regression equations have two regressors (including the constant) in each regression function, and are estimated in the following form:

(1) $\bar{Y}_t = b0 + b1 * X_t$ where b0 and b1 are the least square estimators of the coefficients (B0) and (B1) of the true equation of the relationship between the X and Y variables.

where b1 and b0 are respectively:

(2) $$b1 = \frac{\sum X_t Y_t - \frac{(\sum X_t)(\sum Y_t)}{n}}{\sum X_t^2 - \frac{(\sum X_t)^2}{n}}$$

where n represents total number of observations.

$$(3) \quad b0 = \frac{(Y_t - b1 * X_t)}{n}$$

In Section 5.4, the regression equations each have three regressors (including the constant) and take the following form:

(4) $\bar{Y}_t = b0 + b1 * X(1)_t + b2 * X(2)_t$ where b0 and b1 and b2 are the least square estimators of the true coefficients B0, B1 and B2. The least square estimators are found by solving the following set of three simultaneous equations:

(5)
$$Y = n*b0 + b1 * X(1) + b2 * X(2)$$

$$X(1)*Y = b0 * X(1) + b1 * (X(1)^2) + b2 * X(1)*X(2)$$

$$X(2)*Y = b0 * X(2) + b1 * X(1)*X(2) + b2 * (X(2)^2)$$

where n represents the number of observations in a data set.

Solutions for b0, b1 and b2 are found with the use of matrix algebra, and in particular, utilising Cramer's Rule.

Once the regression functions in Sections 5.3 and 5.4 have been estimated, residual error terms representing the difference between actual Y and fitted Y, $(Y_t - \bar{Y}_t)$ are derived. From this, total sum of squares (SSTO), sum of squared deviations (SSE) and regression sum of squares (SSR) are derived on the following basis:

(6) $SSTO = (Y_t - (\bar{Y}_t/n))^2$

(7) $SSE = (Y_t - \bar{Y}_t)^2$

and

(8) $SSR = SSTO - SSE.$

The derivation of these variables, and the assumption of a normal probability distribution, enable a series of parametric tests to be performed to assess the suitability of the regression model in each case. These tests are introduced below.

(9) Error Mean Square (MSE) $= \dfrac{SSE}{\text{degrees of freedom}}$

(10) Regression Mean Square (MSR) $= \dfrac{SSR}{\text{degrees of freedom}}$

(11) Coefficient of simple determination $(R^2) = \left(1 - \dfrac{SSE}{SSTO}\right)$

(12) Coefficient of simple correlation $(R) = (R^2)^{(1/2)}$

(13) Adjusted (R^2) for Section 5.4 regressions $= 1 - \left(\dfrac{n-1}{n-p}\right)\left(\dfrac{SSE}{SSTO}\right)$

where p represents the number of regressors in the equation.
eg. in Section 5.4, there are 3 regressors in each equation.

(14) Durbin Watson statistic to test for autocorrelation between residuals (DW) $= \dfrac{\sum_{t=2}^{n} (e_t - e_{t-1})^2}{\sum_{t=1}^{n} e_t^2}$

where e_t represents $(Y_t - \bar{Y}_t)$ at time t.

The Durbin-Watson statistic Table is provided for regressions with sample size n > = 15. For regressions with less than a sample size of 15, the critical values relating to n = 15 are used. The test is set up to accept or reject the null hypothesis H0 as follows:

H0: p = 0 (no autocorrelation present)
H1: p > 0 (autocorrelation present)

The Durbin-Watson test is a two-tailed test with critical values D_L and D_U. If D_U = < DW < = $(4 - D_U)$ then accept H0. If $(4 - D_L)$ < = DW < = D_L then reject H0 outright. If D_L < DW < D_U, then the test is indecisive.

D_L and D_U represent the upper and lower bounds on the critical values of DW in the Table.

A number of techniques can be used to try to correct the problems of serial correlation of residual error terms. These can range from attempting to fit a least squares model to the percentage change from year to year, or correlate the absolute amounts of change from year to year, to more sophisticated methods of transforming the regression equations to find a coefficient for the error term and using that to run a Generalised Least Squares to find the coefficients b0 and b1. The most successful method in our case however, proved to be the rho correction technique. This involves calculating a rho correction factor as follows:

$$(15) \qquad rho = \frac{2 - DW}{2}$$

To adjust for autocorrelation, the following adjustments are made to Y_t and $X_t(1)$.

$$(16) \qquad Y'_t = Y_t - (l' * Y_{t-1})$$

$$(17) \qquad X(1)'_t = X_t(1) - (l' * X_{t-1}(1))$$

where l' is the rho correction factor.

Similar calculations can be performed on X(2) for Section 5.4 regressions. This method to correct for autocorrelation was used in all regression work in this study.

$$(18) \qquad \text{Estimated variance of b1:} \quad s^2(b1) = \frac{MSE}{(X(1) - \bar{X}(1))^2}$$

where $\bar{X}$ is the estimated mean of the X(1) variable.

$$(19) \qquad \text{Standard Deviation } s(b1) = (s^2(b1))^{(1/2)}$$

$$(20) \qquad t \text{ statistic } (t^*) = \frac{b1}{s(b1)}$$

The t test is used to establish whether the true coefficient (B1) in the regression equation is significantly nonzero and therefore a meaningful relationship between the X and Y variable exists. It is a two-tailed test to accept or reject the null hypothesis H0:

$$\text{H0: } B1 = 0 \quad \text{if} \quad |t^*| =< t(1 - I/2;\ n - 2)$$
$$\text{and} \quad \text{H1: } B1 /= 0 \quad \text{if} \quad |t^*| > t(1 - I/2;\ n - 2)$$

where I represents the percent confidence interval, which is 95% in all regressions. Similar tests are conducted for the significance of the b2 coefficient in regressions in Section 5.4.

$$(21)\ \text{Estimated variance of b0: } s^2(b0) = MSE \left[\frac{1}{n} + \frac{\bar{X}^2}{(X - \bar{X})^2} \right]$$

$$(22)\ \text{Standard Deviation } s(b0) = (s^2(b0))^{(1/2)}$$

The test for significance of the true intercept is set up in a similar manner to the test for B1. It takes the following form:

$$\text{H0: } B0 = 0 \quad \text{if} \quad A1 =< b1 =< A2$$
$$\text{and} \quad \text{H1: } B0 /= 0 \quad \text{if} \quad b1 < A1 \text{ or } b1 > A2.$$

where $A1 = 0 + t(I/2;\ n - 2)\ s(b0)$, and
$A2 = 0 + t(1 - I/2;\ n - 2)\ s(b0)$.

I again represents the 95% level of confidence.

This test for the intercept is carried out in Section 5.3 regressions only, where there are only two regressors including the intercept b0.

$$(23)\ \text{F statistic } (F^*) = \frac{MSR}{MSE}$$

The F test is also used to establish whether the true coefficient (B1) in the regression equation is significantly nonzero. The test is two-tailed to accept or reject the null hypothesis H0.

$$\text{H0: } B1 = 0 \quad \text{if} \quad F^* =< (1 - I;\ 1,\ n - 2)$$
$$\text{and} \quad \text{H1: } B1 /= 0 \quad \text{if} \quad F^* > (1 - I;\ 1,\ n - 2).$$

where I represents the 95% confidence level.

5.3 ESTIMATION OF REGRESSION FUNCTIONS : DUE AND RECEIVABLE VERSUS OVERALL ECONOMIC INCOME FROM PROPOSED MODEL:

(a) Regression coefficients for database Table 4.2 (B):

TABLE 5.3 (a)

DATE	Due and Receivable A$ [X var]	Economic Income A$ [Y var]
06/30/95	0	0
12/30/95	1,488,732	769,830
06/30/96	999,136	4,060,827
12/30/96	602,023	(486,979)
06/30/97	(119,339)	(3,986,875)
12/30/97	(1,777,156)	(80,041)
06/30/98	(970,319)	(53,682)
Net	223,078	223,078

MSE	5.8E+12
MSR	4.0E+12
(R^2)	0.1217
R	0.3488
DW	2.2901
s^2 (b1)	0.7594
s(b1)	0.8714
t*	0.8323
F*	0.6928
s^2 (b0)	8.3E+11
s(b0)	9.1E+05

(b) Regression coefficients for database Table 4.2 '(B):

TABLE 5.3 (b)

DATE	Due and Receivable A$ [X var]	Economic Income A$ [Y var]
06/30/95	0	515,103
12/30/95	100,274	21,425
06/30/96	100,274	24,640
12/30/96	100,274	13,510
06/30/97	99,726	8,069
12/30/97	100,274	12,282
06/30/98	99,726	5,517
Net	600,548	600,548

MSE	7.4E+07
MSR	2.15E+11
(R^2)	0.9983
R	0.9991
DW	1.0907
s^2 (b1)	0.0086
s(b1)	0.0928
t*	-53.892
F*	2904.35
s^2 (b0)	7.4E+07
s(b0)	8.6E+03

Table 5.3 (a) results show the relatively low level of correlation between due and receivable and true economic income for a portfolio with no constraints placed on income volatility, whereas Table 5.3 (b) results show a much higher level of correlation between due and

receivable income and true economic income for a portfolio of cash flows for which volatility of income has been constrained through time as a result of changes made to the original cash flow composition. The results along side the respective tables, show a sharply higher correlation between income under the two rules when portfolio delta values approach zero, as is the case for the database representing Table 5.3 (b). For instance, (R^2) jumps sharply from 0.1217 in Table 5.3 (a) to 0.9983 in Table 5.3 (b). Furthermore, tests for the significance of the true coefficient B1 in both regression equations, indicate that B1 = 0 in Table 5.3 (a) while in Table 5.3 (b), B1 is significantly positive. This is shown by the t and F statistics in the respective tables. For instance, the $|t^*|$ in Table 5.3 (a) at 0.8323 is significantly less than the critical value at the 95% confidence level of t(.025, 5) = 2.571. Similarly, F* at 0.6928 is also less than the critical value at the 95% confidence level of F(0.95,1,5) = 6.61. Both lead to the acceptance of the null hypothesis B1 = 0 in Table 5.3 (a), indicating little correlation among the alternative rules used to assess income when income volatility is not constrained. The $|t^*|$ and F* in Table 5.3 (b) are 53.892 and 2904.35 respectively, leading to the rejection of the null hypothesis and therefore confirming a significant degree of correlation among the alternative income assessment rules in an enviroment in which income volatility is controlled.

The Durbin Watson (DW) statistic in Table 5.3 (a) at 2.2901 falls between the two-tailed critical levels of 1.36 and 2.64, suggesting an absence of serial correlation in the regression model, and therefore leading to the confirmation of the null hypothesis B1=0 at 95% confidence. The DW at 1.0907 in Table 5.3 (b) however, falls between the 95% confidence one-tailed critical levels 1.08 and 1.36, making the test indecisive in determining the presence of serial correlation. This is not considered a serious enough problem to make re-specifications to the model however and the rejection of the null hypothesis in Table 5.3 (b) stands.

EXERCISE 4.3:

The following three tables (Table 5.3 (c), (d) and (e)), examine semi-annual data on the multi-swap portfolio. Table 5.3 (c) contains income data which is derived from random stochastic processes on term structures that place no constraints on portfolio delta values. Table 5.3 (d) contains income data derived under term structures that follow particular stochastic processes to constrain portfolio delta values. Table 5.3 (e) contains income data generated from a term structure curve that subsequently follows a non-stochastic process to portfolio maturity, but places no delibrate contraints on portfolio delta values through time. The income data from the three tables is derived using the same portfolio of cash flows.

(c) Regression coefficients for database Table 4.3 (B):

TABLE 5.3 (c ø)

DATE	Due and Receivable [X var]	Economic Income [Y var]
09/30/94	0.00E+00	0.00E+00
03/30/95	3.32E+06	-2.13E+05
09/30/95	3.88E+06	1.66E+05
03/30/96	4.24E+06	4.35E+05
09/30/96	4.63E+06	6.39E+05
03/30/97	3.39E+06	5.94E+04
09/30/97	2.94E+06	-5.80E+05
03/30/98	2.22E+06	-1.41E+06
09/30/98	1.55E+06	-2.38E+06
03/30/99	4.66E+05	-3.63E+06
09/30/99	-1.35E+07	-2.78E+06
03/30/00	-1.30E+07	-1.84E+06
09/30/00	-1.24E+07	-7.33E+05
Net	-1.23E+07	-1.23E+07

COLUMNS	A	B
MSE	1.55E+12	6.11E+11
MSR	4.91E+12	8.85E+09
(R^2)	0.2243	0.0013
R	0.4736	0.0363
DW	0.6004	0.6850
s^2 (b1)	0.00263	0.00275
s(b1)	0.05132	0.05248
t*	1.7832	-0.1203
F*	3.1799	0.0145
s^2 (b0)	1.21E+11	4.95E+10
s(b0)	3.48E+05	2.22E+05

(d) Regression coefficients for database Table 4.3 '(B):

TABLE 5.3 (d)

DATE	Due and Receivable [X var]	Economic Income [Y var]
09/30/94	0.00E+00	0.00E+00
03/30/95	3.32E+06	5.09E+07
09/30/95	3.21E+06	-4.49E+07
03/30/96	3.17E+06	-8.69E+07
09/30/96	9.18E+07	-8.04E+07
03/30/97	-2.32E+08	-2.28E+08
09/30/97	-3.43E+08	-3.15E+08
03/30/98	-3.38E+08	-2.72E+08
09/30/98	-3.43E+08	-1.99E+08
03/30/99	-3.78E+08	-2.40E+07
09/30/99	4.30E+08	4.06E+08
03/30/00	4.26E+08	3.69E+08
09/30/00	5.61E+08	3.08E+08
Net	-1.16E+08	-1.16E+08

COLUMNS	A	B
MSE	1.15E+16	6.58E+15
MSR	5.53E+17	2.24E+17
(R^2)	0.8144	0.7560
R	0.9024	0.8695
DW	0.8267	1.1239
s^2 (b1)	9.27E-03	8.78E-03
s(b1)	9.63E-02	9.37E-02
t*	6.9472	5.8381
F*	48.2634	34.0839
s^2 (b0)	8.82E+14	5.10E+14
s(b0)	2.97E+07	2.26E+07

The regression function and statistical tests for the case of the multi-swap portfolio generating income under alternative assessments where volatility of income is left unconstrained (income flows shown in Table 4.3 (B)), are highlighted in Table 5.3 (c) whereas the regression function and the statistical tests for the multi-swap portfolio generating income where delta values are constrained to approach zero (Table 4.3'(B)), are highlighted in Table 5.3 (d).

The primary regression results in Tables 5.3 (c) and (d) are in Column A and encounter some serial correlation problems. The DW at 0.6004 and 0.8267 respectively, are substantially below the one-tailed

95% confidence critical level of 1.08, suggesting positive serial correlation among residuals. The rho correction technique is applied in both cases and the regressions re-run. The results are seen in Column B of Tables 5.3 (c) and (d). Table 5.3 (c) shows a very poor correlation between the two income assessments. This is seen by the (R^2) at 0.0013. Furthermore, the $|t^*|$ at 0.1203 and F^* at 0.0145 are below the 95% confidence $t(0.975, 11) = 2.201$ and $F(0.95,1,11) = 4.84$ respectively, therefore leading to the acceptance of the null hypothesis that the true coefficient $B1 = 0$. In contrast, putting constraints on portfolio delta,the results in Table 5.3 (d) show a significantly higher correlation between the two income assessments as seen by the (R^2) of 0.7560. Furthermore, the $|t^*|$ and F^* are 5.8381 and 34.0839 respectively, which are well above the critical levels of 2.201 and 4.84 respectively. This leads to the rejection of the null hypothesis that the true coefficient $B1 = 0$. The results in Table 5.3 (c) still suffer from serial correlation problems whereas the improvement in the DW in Table 5.3 (d) from 0.8267 to 1.1239 should be noted. The new DW in Table 5.3 (d) puts it within the one-tailed 95% confidence critical levels 1.08 and 1.36, significantly reducing serial correlation among residuals.

EXERCISE 4.4:

(e) Regression coefficients for database Table 4.4 (B):

TABLE 5.3 (e)

DATE	Due and Receivable [X var]	Economic Income [Y var]
09/30/94	0.00E+00	0.00E+00
03/30/95	3.32E+06	4.90E+06
09/30/95	3.37E+06	3.62E+06
03/30/96	3.33E+06	-2.52E+06
09/30/96	3.37E+06	-1.45E+06
03/30/97	7.23E+06	-5.01E+05
09/30/97	7.62E+06	1.88E+06
03/30/98	7.49E+06	1.06E+06
09/30/98	7.62E+06	-1.96E+06
03/30/99	8.15E+06	-1.06E+07
09/30/99	-2.38E+07	-9.46E+06
03/30/00	-2.35E+07	-6.52E+06
09/30/00	-2.66E+07	-8.85E+05
Net	-2.24E+07	-2.24E+07

MSE	2.0E+13
MSR	4.1E+13
(R^2)	0.1583
R	0.3978
DW	1.0375
s^2 (b1)	9.4E-03
s(b1)	9.7E-02
t*	1.4382
F*	2.0685
s^2 (b0)	1.6E+12
s(b0)	1.2E+06

The results in Table 5.3 (e) confirm the behaviour of income under a non-stochastic term structure enviroment, as described by the proposed model. Correlation between the two income assessments is poor as seen by the low (R^2) of 0.1583. The $|t^*|$ at 1.4382 and F^* at 2.0685 lead to the acceptance of the null hypothesis that the true coefficient B1 = 0. The results are similar in nature to those in Table 5.3 (c) in which no constraints were placed on portfolio delta values through time. The results of Table 5.3 (e) indicate that transactions in which all periodic cash flows from time t=0 to maturity, are determined at the outset, as is the case under a non-stochastic term structure enviroment, do not necessarily lead to identical income assessments under alternative rules. The divergence between the alternative rules is as great as that produced under a randomly generated stochastic process on term structure rates. The example is similar in nature to the more common and practical example of a borrower of term funds on a floating rate basis who then swaps the flows to fixed rate. Under the accounting definitions, such a transaction is deemed to be classified as 'hedging' simply because the borrower has replaced cash flows that are unknown at the outset, with those that are known with certainty, although the swap's contribution to portfolio risk and return varies with time. This is also highlighted in the results in Table 5.3 (e) which show the behaviour of portfolio volatility measures under a non-stochastic term structure enviroment. The behaviour is similar in nature to volatility measures derived under any other randomly generated stochastic processes on term structure rates.

The next set of regression results are derived for the daily database sets in Tables 4.3 (D), 4.3 '(D) and 4.4 (D). The results are in abbreviated form in Table 5.3 (f). The databases in Tables 4.3 (D) and '(D) are the daily equivalent of the semi-annual data in Tables 4.3 (B) and '(B) respectively, while the database in Table 4.4 (D) is the daily equivalent of the semi-annual data in Table 4.4 (B). As with the semi-annual data, the daily data in Table 4.3 (D) represents income assessments under the due and receivable basis and the proposed model in an enviroment where volatility of income as defined by delta and theta values is not controlled through time, whereas the daily data in Table 4.3 '(D) is representative of income assessments under the same rules in an enviroment where income volatility is constrained to approaching zero through time. The daily data in Table 4.4 (D) represents income assessments under the due and receivable basis and the proposed model under a non-stochastic term structure enviroment where the entire set of portfolio cash flows from time t=0 to maturity, are known at the outset with certainty.

(f) Regression coefficients for the daily databases presented in Tables 4.3 (D), 4.3 '(D) and 4.4 (D):

TABLE 5.3 (f)

Results from	Table 4.3 (D)	Table 4.3 (D)	Table 4.3 '(D)	Table 4.4 (D)
	Due and Receivable vs Economic Income	Regression re-run	Due and Receivable vs Economic Income	Due and Receivable vs Economic Income
COLUMNS	A	B	C	D
MSE	4.08E+07	2.47E+05	2.80E+12	8E+10
MSR	2.58E+10	7.88E+07	3.02E+15	2E+11
R^2	0.2239	0.1271	0.3294	0.0013
R	0.4732	0.3565	0.5739	0.0359
DW	0.0089	2.5724	1.7232	1.9922
s^2 (b1)	0.000013	3.93E-05	0.0004	0.0067
s(b1)	0.0036	6.27E-03	0.0204	0.0818
t*	25.1398	-17.8603	32.8069	1.6797
F*	632.0077	318.9895	1076.2915	2.8215
s^2 (b0)	1.90E+04	1.13E+02	1.28E+09	4E+07
s(b0)	1.38E+02	1.06E+01	3.58E+04	6E+03

The initial set of regression results for the database in Table 4.3 (D) are highlighted in Column A of Table 5.3 (f). The regression results suffer severe autocorrelation problems and hence the regression was re-run after the rho correction technique was applied. The subsequent regression results are shown in Column B of Table 5.3 (f). The results still pose some problems in this area although a DW of 2.5724 is not deemed to be much above the upper-tail critical level of 2.35.Columns C and D show regression results from Table 4.3 '(D) and 4.4 (D) respectively. The DW in both the regressions falls between the two-tailed 95% confidence critical levels of 1.65 and 2.35 indicating no presence of serial correlation among residuals. The (R^2) in the three regressions confirm that the database forming Table 4.3 '(D) where portfolio delta is minimized, shows the best correlation level between the two income assessments. The results also indicate that the correlation among alternative assessment rules is independant of the term structure rates being non-stochastic or stochastic in nature through time. This is seen in the regression results in Column D of Table 5.3 (f) which correspond to the database in Table 4.4 (D) in which (R^2) at 0.0013 is insignificant and substantially lower than the (R^2) for the other two regressions.

The (R^2) for the three regression equations concerning the daily databases however, are substantially lower than the (R^2) for the semi-annual equivalent databases, whose regression results are in Tables 5.3 (c) - (e). This may be because the trial and error approach used in finding term structure rates that constrain portfolio delta values to

approaching zero through time from t = 0 to maturity, yields approximate solutions to finding such term structure rates. The impact of using approximations is possibly exaggerated on a much larger database such as the daily databases used. Finding exact solutions to term structure rates, assuming that this was possible and led to a unique set of term structure rates, would be time-consuming and would not yield much in the way of additional benefits. Derivation of precise term structures requires the use of sophisticated software to use the methodology described in the latter part of Chapter Three, and is therefore beyond the scope of this study. The critical levels on the t anf F statistics at 95% confidence are t(0.975, 2190) = 1.96 and F(0.95, 1, 2190) = 3.84 for the three regressions. Therefore, the true coefficient B1 is significantly greater than zero in the regression results pertaining to the databases presented in Table 4.3 (D) and '(D) while for Table 4.4 (D), the null hypothesis is accepted at 95% confidence that B1 is zero.

EXERCISE 4.5:

The three tables (Table 5.3 (g), (h) and (i)), show the regression data on the semi-annual databases contained in Tables 4.5 (B), '(B) and ''(B) respectively. The three tables contain semi-annual assessments of income on the single-swap portfolio. Table 5.3 (g) derives regression functions for income generated under random stochastic processes on term structure rates that place no constraints on portfolio delta values. Table 5.3 (h) derives regression functions for income generated under term structure rates that constrain portfolio delta values to approaching zero through time. Table 5.3 (i) derives regression functions for income that is also generated from a derived set of term structures that follow particular stochastic processes through time to constrain portfolio delta values to approaching zero. The difference between 5.3 (h) and 5.3 (i) is that the actual term structure rates are different and reflect the fact that the derivation of term structure rates that constrain income volatility is not unique to one particular set of rates. By using two independant set of term structure rates, this allows us to verify the results regarding the behaviour of income from a single interest rate swap instrument.

(g) Regression coefficients for database Table 4.5 (B):

TABLE 5.3 (g g)

DATE	Due and Receivable [X var]	Economic Income [Y var]
09/30/94	0	0
03/30/95	2,779,557	2,354,292
09/30/95	2,251,604	1,944,464
03/30/96	1,773,395	1,574,034
09/30/96	1,413,109	1,298,787
03/30/97	1,213,379	1,177,256
09/30/97	1,045,003	1,080,375
03/30/98	773,358	880,050
09/30/98	514,685	684,226
03/30/99	161,162	384,299
09/30/99	(208,337)	55,855
30/03/00	(300,620)	(17,343)
Net	11,416,294	11,416,294

COLUMNS	A	B
MSE	6.14E+09	7.95E+08
MSR	6.51E+12	4.93E+12
(R^2)	0.9907	0.9984
R	0.9953	0.9992
DW	0.6178	0.8403
s^2 (b1)	5.76E-04	1.09E-04
s(b1)	2.40E-02	1.05E-02
t*	32.5703	78.7492
F*	1060.8214	6201.4309
s^2 (b0)	1.03E+09	7.46E+07
s(b0)	3.21E+04	8.64E+03

(h) Regression coefficients for database Table 4.5 '(B):

TABLE 5.3 (g h)

DATE	Due and Receivable [X var]	Economic Income [Y var]	
09/30/94	0	0	
03/30/95	2,780	(86,087)	*
09/30/95	(5,875)	(4,611)	
03/30/96	3,543	2,502	
09/30/96	(7,595)	(8,890)	
03/30/97	(24,386)	(21,161)	
09/30/97	1,003	33	
03/30/98	(18,748)	(18,703)	
09/30/98	(44,851)	(23,880)	
03/30/99	3,805	5,351	
09/30/99	(50,583)	14,532	*
30/03/00	(6)	(0)	
Net	(140,914)	(140,914)	

COLUMNS	A	B
MSE	7.39E+08	1.44E+07
MSR	8.07E+07	9.07E+08
(R^2)	0.0108	0.8871
R	0.1039	0.9418
DW	2.2678	1.9850
s^2 (b1)	1.85E-01	6.52E-03
s(b1)	4.30E-01	8.08E-02
t*	-0.3305	7.9273
F*	0.1092	62.8421
s^2 (b0)	8.71E+07	2.01E+06
s(b0)	9.33E+03	1.42E+03

(i) Regression coefficients for database Table 4.5 ''(B):

TABLE 5.3 (g i)

DATE	Due and Receivable [X var]	Economic Income [Y var]	
09/30/94	0	0	
03/30/95	2,780	(79,480)	*
09/30/95	2,252	(91)	
03/30/96	(13,182)	(12,486)	
09/30/96	(13,327)	(12,592)	
03/30/97	(13,109)	(11,808)	
09/30/97	(19,058)	(16,336)	
03/30/98	(18,748)	(13,193)	
09/30/98	(19,058)	(10,245)	
03/30/99	(18,748)	(292)	
09/30/99	(19,058)	27,259	*
30/03/00	(6)	(0)	
Net	(129,264)	(129,264)	

COLUMNS	A	B
MSE	5.83E+08	2.49E+07
MSR	8.39E+08	2.07E+08
(R^2)	0.1259	0.5107
R	0.3548	0.7146
DW	2.3875	1.1773
s^2 (b1)	6.23E-01	3.65E-02
s(b1)	7.89E-01	1.91E-01
t*	-1.2001	2.8893
F*	1.4402	8.3483
s^2 (b0)	1.21E+08	7.14E+06
s(b0)	1.10E+04	2.67E+03

The primary regression results are in Column A of Tables 5.3 (g), (h) and (i). The results in Table 5.3 (g) are plagued by substantial auto-correlation problems. Attempts to apply the iterative rho correction technique have not yielded much improvements as shown by the results in Column B of Table 5.3 (g). The (R^2) is extremely high at 0.9984, which is unusual in cases where no constraints have been placed on portfolio delta. However, because of the serial correlation problem among residuals, it is difficult to make further judgements on the merits of the results in Table 5.3 (g). The DW for the regressions in Tables 5.3 (h) and (i) fall between the 95% confidence two-tailed critical levels of 1.08 and 2.92, suggesting the absence of serial autocorrelation. However, the (R^2) in Column A in both regressions indicate poor correlation between due and receivable and overall economic income from the proposed model, even

though portfolio delta values have been constrained to approaching zero through time. The regression results are completely at odds with the results in previous Exercises in which correlation between the two income assessments rises sharply when portfolio delta values are constrained. These low (R^2) are influenced by the first and second last observations in each case (illustrated by the * sign). When both observations are removed and the regressions re-run, the (R^2) rises sharply in both cases, as seen in Column B in Tables 5.3 (h) and (i) and the results become more consistent with those in the earlier Exercises.

The first and second last observations on economic income from the proposed model in both Tables 5.3 (h) and (i) are heavily influenced by the theta values for that particular instant time. The theta values have a particularly dramatic impact on portfolio valuation for the databases contained in Tables 4.5 '(B) and ''(B) (these correspond to Tables 5.3 (h) and (i) respectively) at the start and towards maturity of portfolio cash flows. This is because of the very dramatic shift in both the absolute term structure rates and the shape of the term structure curves especially from time t = 0 to time t = 1 and from time t = n-1 to time t = n, where n represents the final maturity period of portfolios. This is readily seen in both Tables 4.5 '(A) and ''(A) in Appendix Five which contain the term structure databases for the income databases in Tables 4.5 '(B) and ''(B) respectively in Appendix Five. The theta values are contained in Tables 4.5 '(C) and ''(C) respectively in Appendix Five and highlight the difficulty of obtaining a set of term structure rates from start to maturity that would be able to constrain both delta and theta values through time, simultaneously. It is difficult to impose constraints on theta values independantly of the delta values, except perhaps for the rather uninteresting case of a flat term structure enviroment at each period, from start to maturity. In the absence of such a term structure enviroment, putting constraints on portfolio delta may still result in divergence between realised income and economic income from time to time, within certain periods, depending on how dramatic the shift in term structure rates and the impact on theta values from one period to another. Once the two particular observations are removed from the regression, the impact of low delta values leads to convergence between the alternative income assessment rules as in the earlier Exercises. Improvements in both the F* and $|t^*|$ are noticed in Column B results compared to Column A results for both Tables 5.3 (h) and (i). The critical values for t and F at the 95% confidence level are: t(0.975, 10) = 2.228 and F(0.95, 1, 10) = 4.96. In both Tables 5.3 (h) and (i), the t and F statistics point to the significance of the true coefficient B1, after the deletion of the two observations. (The critical values are somewhat higher once the two observations are removed. However, the differences arising in the critical values is insignificant and do not alter the results).

General Comments on Section 5.3 results:

The major result of Section 5.3 is the increasing degree of convergence between the alternative measures of income as volatility of

income declines. Volatility of income is represented by the delta and theta values of the portfolio through time. The results are particularly good in cases where declining delta values lead to a higher degree of convergence between the cash based assessment methods and overall economic income from the proposed model. Theta values as an additional measure of income volatility do not appear to be as effective a measure in determining the convergence between the alternative income measures. This may be due to the particular methodology used in the study in that the term structure rates derived at the beginning of each period have followed particular processes to constrain delta values through time whereas the theta values have simply been derived as a consequence. This, in many cases has led to limits being placed on delta values whereas theta values have been allowed to remain unconstrained. The apparent inconsistancy encountered in trying to place constraints on income volatility to study the effects on income, has been unavoidable because of the immense difficulty in being able to constrain theta values to approaching zero. As mentioned earlier, this is not possible to do where the term structure rates are positively or negatively sloping through time.

A secondary result concerns the imapct of a stationary term structure enviroment on income assessments under alternative rules. A stationary term structure enviroment from start to maturity of a portfolio, while leading to certainty with respect to future portfolio cash flow outcomes, does not in itself impact on the relative convergence between the various assessments of income. The regression results indicate that the degree of convergence between alternative assessment rules under a stationary term structure enviroment is as good or bad as that under any stochastic term structure enviroment. This implies that the known outcomes with respect to future income associated with a stationary term structure enviroment, has elements of both risk and risk-free characteristics.

5.4 ESTIMATION OF REGRESSION FUNCTIONS FOR PROPORTION OF CURRENT INCOME IN OVERALL ECONOMIC INCOME VERSUS PORTFOLIO DELTA AND THETA:

The risk characteristics of economic income in terms of the relative composition of current and non-current income in overall income from the proposed model, and the influence on that composition from the two moments of the volatility measures used (delta and theta), is the subject of the regression work in Section 5.4.

(a) Regression coefficients for database Table 4.2 (C):

TABLE 5.4 (a)

DATE	r V /Income t t-1 (%) [Y var.]	Portfolio Theta [X1 var.]	Portfolio Delta [X2 var.]
06/30/95	0.00	335,969	25,438
12/30/95	0.00	(235,546)	21,495
06/30/96	-0.69	(130,036)	18,321
12/30/96	-20.74	(831,538)	13,871
06/30/97	-1.57	(330,599)	8,943
12/30/97	218.48	(9,037)	4,667
06/30/98	100.01	0	0

MSE	4,183
MSR	14,481
R^2	0.6338
Adj. R^2	0.4507
R	0.7961
DW	3.2811
s^2(b2)	8.20E-06
s(b2)	2.86E-03
t* (b2)	-2.3775
s^2(b1)	5.36E-09
s(b1)	7.32E-05
t* (b1)	1.46
F*	3.4616

(b) Regression coefficients for database Table 4.2 '(C):

TABLE 5.4 (b)

DATE	r V /Income t t-1 (%) [Y var.]	Portfolio Theta [X1 var.]	Portfolio Delta [X2 var.]
06/30/95	0.00	4982.68	82.59
12/30/95	82.34	4076.62	60.29
06/30/96	69.30	-120.45	42.34
12/30/96	115.08	-1444.49	25.79
06/30/97	169.89	-781.79	12.72
12/30/97	99.25	928.75	4.44
06/30/98	100.01	0.00	0.00

MSE	1,390
MSR	5,110
R^2	0.6477
Adj. R^2	0.4715
R	0.8048
DW	2.5465
s^2(b2)	0.2456
s(b2)	0.4956
t* (b2)	-1.5462
s^2(b1)	0.000038
s(b1)	0.006156
t* (b1)	-1.32
F*	3.6766

A comparision of results in Tables 5.4 (a) and (b) shows the relative consistency of adjusted (R^2). While the absolute (R^2) are somewhat lower than desired, the relative constant nature of the (R^2) between the two tables suggests that the volatility of income measures as shown by the delta and theta values through time, are a reasonable determinant of the composition of risk-free and risky income in overall income.

The results in Table 5.4 (a) however, encounter a slight serial correlation problem with the DW of 3.2811 falling marginally above the two-tailed 95% confidence critical level of 3.05. The results in Table 5.4 (b) on the other hand, are free from serial correlation as the DW of 2.5465 falls between the two-tailed 95% confidence critical levels of 0.95 and 3.2811. The critical levels on the t and F statistic at 95% confidence level are: t(0.975, 4) = 2.776, and F(0.95, 2, 4) = 3.74. In Table 5.4 (a), the F* at 3.4616 and in Table 5.4 (b) at 3.6766 are marginally lower than the critical level and this leads to the acceptance of the null hypothesis that the true coefficients B1 and B2 are insignificant. This is also confirmed by the low |t*| for both b1 and b2 in Tables 5.4 (a) and (b).

EXERCISE 4.3:

The next three tables (Table 5.4 (c), (d) and (e)), examine semi-annual data on the multi-swap portfolio. Table 5.4 (c) contains the database derived under randomly selected stochastic term structures that place no constraints on portfolio delta values. Table 5.4 (d) contains the database derived under term structures that follow particular stochastic processes to minimize portfolio delta values. Table 5.4 (e) contains the database generated from a set of non-stochastic term structure rates that place no constraints on portfolio delta values.

(c) Regression coefficients for database Table 4.3 (C):

TABLE 5.4 (c)

DATE		r V /Income t t-1 (%) [Y var.]	Portfolio Theta [X1 var.]	Portfolio Delta [X2 var.]
09/30/94		0.00	4,889,588	3
03/30/95		0.00	5,603,187	4,747
09/30/95		-83.94	5,711,709	9,771
03/30/96		-71.66	5,843,938	15,194
09/30/96		-80.92	5,280,166	2,934
03/30/97	*	-1205.88	4,126,904	(10,971)
09/30/97		158.62	2,706,274	(25,206)
03/30/98		80.10	1,310,909	(40,251)
09/30/98		58.76	(468,940)	(57,336)
03/30/99		46.10	19,858	(41,141)
09/30/99		73.65	(467,765)	(23,917)
03/30/00		76.12	(13,771)	(554)
09/30/00		99.98	0	0

COLUMNS	A	B
MSE	1.31E+05	3,170
MSR	8.32E+04	1.90E+04
R^2	0.1127	0.5710
Adj. R^2	-0.0648	0.4756
R	0.3357	0.7556
DW	2.3752	2.0181
s^2(b2)	0.000021	5.16E-07
s(b2)	0.004615	7.18E-04
t* (b2)	0.4781	-0.5250
s^2(b1)	1.55E-09	3.85E-11
s(b1)	3.93E-05	6.20E-06
t* (b1)	-1.40	-3.07
F*	0.6351	5.9887

(d) Regression coefficients for database Table 4.3 '(C):

TABLE 5.4 (d)

DATE	r V /Income t t-1 (%) [Y var.]	Portfolio Theta [X1 var.]	Portfolio Delta [X2 var.]
09/30/94	0.00	4,889,588	3
03/30/95	0.00	(289,913,599)	818
09/30/95	-3.47	(250,992,962)	(174)
03/30/96	0.02	(82,187,569)	(1,700)
09/30/96	102.31	349,364	(5,652)
03/30/97	102.91	(47,246,582)	(4,053)
09/30/97	99.45	(994,718)	(2,599)
03/30/98	100.59	(708,665)	(1,191)
09/30/98	99.30	(84,840)	(1,870)
03/30/99	97.13	1,446,574	5,712
09/30/99	99.57	1,341,219	4,458
03/30/00	100.39	1,097,177	5,807
09/30/00	99.63	0	0

COLUMN	A
MSE	1,382.85
MSR	7,228.30
R^2	0.5111
Adj. R^2	0.4133
R	0.7149
DW	1.4237
s^2(b2)	0.000009
s(b2)	0.003038
t* (b2)	0.0136
s^2(b1)	1.13E-14
s(b1)	1.06E-07
t* (b1)	3.23
F*	5.2271

EXERCISE 4.4:

(e) Regression coefficients for database Table 4.4 (C):

TABLE 5.4 (e)

DATE		r V /Income t t-1 (%) [Y var.]	Portfolio Theta [X1 var.]	Portfolio Delta [X2 var.]
09/30/94		0.00	4,889,588	3
03/30/95		0.00	3,200,633	7,315
09/30/95		1.50	(4,031,988)	13,797
03/30/96		-2.46	(2,718,087)	16,840
09/30/96		9.54	(1,365,111)	1,733
03/30/97		59.81	2,385,338	(14,139)
09/30/97	*	-30.35	3,587,299	(29,262)
03/30/98	*	-71.12	3,821,868	(44,727)
09/30/98		50.33	(5,370,755)	(62,047)
03/30/99		12.25	(4,908,952)	(45,213)
09/30/99		20.74	(4,910,615)	(26,375)
03/30/00		22.28	(4,728)	(1,254)
09/30/00		99.99	0	0

COLUMNS	A	B
MSE	1,808.81	1,148.73
MSR	1,442.46	635.04
R^2	0.1376	0.1214
Adj. R^2	-0.0349	-0.0982
R	0.3709	0.3485
DW	1.6604	1.0257
s^2(b2)	2.38E-07	1.84E-07
s(b2)	0.000488	0.000429
t* (b2)	0.6153	-1.2106
s^2(b1)	1.08E-11	9.01E-12
s(b1)	3.28E-06	3.00E-06
t* (b1)	-1.23	0.65
F*	0.7975	0.5528

The primary regression results are in Column A of Tables 5.4 (c) to (e). The DW in all three regressions lie between the two-tailed 95% confidence critical levels of 0.95 and 3.05, which suggest an absence of serial correlation problems in the three regressions. The negative adjusted (R^2) in Tables 5.4 (c) and (e) are cause for concern however. For the database in Table 5.4 (c), derived under random movements in term structure rates through time, the low adjusted (R^2) appears to be a result of the sixth observation. Once that is deleted and the regression re-run, the results in Column B show a sharply improved adjusted (R^2) to levels that are consistent with those in the previous Exercise. For the database in Table 5.4 (e) which is derived under a non-stochastic process on term

structure rates, the deletion of the seventh and eighth observations from the regression, do not yield similar improvements in (R^2). The adjusted (R^2) in the regression in Table 5.4 (d) is consistent with the results of the re-run regression in Table 5.4 (c) and those of the previous Exercise. The Table 5.4 (d) database is derived under the selection of particular stochastic processes on term structure rates that attempt to constrain portfolio income volatility through time from t = 0 to maturity.

The critical levels on the t and F statistic at 95% confidence associated with original number of observations are: t(0.975, 10) = 2.228, and F(.95,2,10) = 4.10. The critical levels are used to test for the significance of Column B results in both Tables 5.4 (c) and (e) even though there are a slightly reduced number of observations than Column A. The F* in Tables 5.4 (c) and (d) (5.9887 and 5.2271 respectively) leads to the rejection of the null hypothesis at 95% confidence, that the true coefficients B1 and B2 are zero. In Table 5.4 (e), the null hypothesis is accepted at 95% confidence. The t* however, reveals some interesting results regarding the significance of the true coefficients B1 and B2 in Tables 5.4 (c) and (d). In both cases, only the |t*| relating to b1, in Column B is above the critical level of 2.228. The coefficient b1 relates to theta values in the regressions. The |t*| for b2 in Column B of Tables 5.4 (c) and (d) (the coefficient b2 corresponds to the significance of portfolio delta values) are well below the critical level of 2.228 and therefore the true coefficient B1 is accepted as being insignificant in both regressions, at 95% confidence.

(f) Regressions coefficients for daily databases in Tables 4.3 (D), 4.3 '(D) and 4.4 (D) are presented in Table 5.4 (f) below:

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* Please note that the corresponding semi-annual databases for the three daily tables are:

Semi-Annual Database	Daily Equivalent Database
Table 4.3 (C)	Table 4.3 (D)
Table 4.3 '(C)	Table 4.3 '(D)
Table 4.4 (C)	Table 4.4 (D)

The database in Table 4.3 (D) contains income assessed under the cash based rules and the proposed model derived under random stochastic processes on term structure rates whereas the database in Table 4.3 '(D) contains income flows derived under particular stochastic processes on term structure rates to constrain portfolio delta values through time. The database in Table 4.4 (D) is derived under a non-stochastic process on term structure rates through time.

TABLE 5.4 (f)

Results from	Table 4.3 (D)		Table 4.3 '(D)		Table 4.4 (D)
COLUMNS	A	B	C	D	E
MSE	118,268	1,296	199	53	3.4E+08
MSR	23,001,050	30,959	4,655,803	93,776	1.1E+08
R^2	0.1508	0.0213	0.9552	0.6188	0.0003
Adj. R^2	0.1500	0.0205	0.9552	0.6184	-0.0006
R	0.3884	0.1461	0.9774	0.7866	0.0172
DW	0.0111	1.6122	0.3045	2.5235	2.0024
s^2(b2)	8.11E-12	2.64E-10	7.16E-18	7.18E-17	1.0E-08
s(b2)	2.85E-06	1.63E-05	2.68E-09	8.47E-09	1.0E-04
t* (b2)	-18.6751	2.7481	214.9693	59.6164	-0.6285
s^2(b1)	1.05E-07	0.000001	1.15E-08	5.89E-08	0.0003
s(b1)	3.23E-04	0.000743	1.07E-04	0.000243	0.0158
t* (b1)	1.27	9.14	-3.51	-0.02	0.33
F*	194.4820	23.89	23,362.04	1,777.41	0.33

The primary regression results of Tables 4.3 (D) and '(D), shown in Columns A and C respectively, exhibit serious serial correlation problems. In both cases, the DW at 0.0111 and 0.3045, are well below the one-tailed critical level at 95% confidence of 1.63. The rho correction technique is applied in both cases and the regressions re-run. The new results are shown in Column B and D respectively. Both new DWs (1.6122 and 2.5235) fall at very close to, or between the two-tailed critical levels at 95% confidence, of 1.63 and 2.37, confirming the removal of serial correlation problems. The (R^2) however drops significantly in both cases from their previous levels with only the new (R^2) for Table 4.3 '(D) showing consistency with previous regressions. The critical levels at 95% confidence on the t and F statistic are: t(0.975, 2189) = 1.96, and F(0.95, 2, 2189) = 3.00. F* in Columns B and D lead to the rejection at 95% confidence that the true coefficients B1 = B2 = 0 for regression results in Table 4.3 (D) and '(D). As with the previous set of Exercises, B1 represents the coefficient of the theta variable while B2 represents the coefficient of the delta variable in the regression equations. For the regression results corresponding to Table 4.4 (D), the null hypothesis is accepted at 95% confidence that B1 = B2 =0. The |t*| also reinforces the point, where |t*| for b1 and b2 for regressions in Tables 4.3 (D) and '(D), show that both the true coefficients B1 and B2 are significant at the 95% confidence level. This finding is somewhat different to their corresponding semi-annual regression results earlier where only B1 was found to be significant in both cases. In the regression in Table 4.4 (D), neither of the two coefficients B1 and B2 are found to be significantly positive.

EXERCISE 4.5:

The three tables (Table 5.4 (g), (h) and (i)), examine semi-annual data on the single-swap portfolio. Table 5.4 (g) contains the database derived under randomly selected stochastic term structures that place no constraints on portfolio delta values. Table 5.4 (h) contains the database derived under term structures that follow particular stochastic processes to constrain portfolio delta values. Table 5.4 (i) contains the second database generated from an independantly derived set of term structures that follow particular stochastic processes to constrain portfolio delta values through time.

(g) Regression coefficients for database Table 4.5 (C):

TABLE 5.4 (g)

DATE		r V /Income t t-1 (%) [Y var.]	Time Decay [X1 var.]	Portfolio Vol. [X2 var.]
09/30/94		0.00	1,214,830	39,152
03/30/95		0.00	538,855	36,045
09/30/95		-0.86	516,247	32,892
03/30/96		-2.00	466,921	29,495
09/30/96		-3.36	550,646	26,021
03/30/97		-4.23	438,599	22,235
09/30/97		-5.01	269,683	18,349
03/30/98		-6.12	146,341	14,120
09/30/98		-7.52	(31,906)	9,742
03/30/99	*	-11.40	(162,295)	4,988
09/30/99	*	-59.85	(313)	(13)
03/30/00		100.01	0	0

COLUMNS	A	B
MSE	1,496.29	752.10
MSR	199.95	2,193.56
R^2	0.0288	0.4545
Adj. R^2	-0.1870	0.2987
R	0.1698	0.6742
DW	2.1703	1.3823
s^2(b2)	7.17E-07	5.43E-07
s(b2)	8.47E-04	0.000737
t* (b2)	-1.1213	-4.2252
s^2(b1)	9.54E-10	6.53E-10
s(b1)	3.09E-05	2.56E-05
t* (b1)	0.90	2.45
F*	0.1336	2.9166

(h) Regression coefficients for database Table 4.5 '(C):

TABLE 5.4 (h)

DATE		r V /Income t t-1 (%) [Y var.]	Time Decay [X1 var.]	Portfolio Vol. [X2 var.]
09/30/94		0.00	1,214,830	39152.02
03/30/95		0.00	(7,552,366)	-75.66
09/30/95		213.76	9,088,884	-654.39
03/30/96		-96.01	(10,454,704)	-740.21
09/30/96		125.66	(15,973,327)	-622.72
03/30/97		115.92	19,483,565	-1743.39
09/30/97	*	-13163.25	(18,661,094)	-1467.62
03/30/98		104.62	(21,564,319)	-1353.39
09/30/98		166.50	54,297,630	-1198.52
03/30/99		-30.89	(41,650,835)	-993.83
09/30/99	*	-225.90	1,691	-0.27
03/30/00		100.01	0	0.00

COLUMNS	A	B
MSE	16,743,006	7,680.15
MSR	4,675,020	15,531.24
R^2	0.0584	0.3662
Adj. R^2	-0.1508	0.1851
R	0.2417	0.6051
DW	2.2916	3.4754
s^2(b2)	0.011412	5.33E-06
s(b2)	0.106825	0.002309
t* (b2)	0.2927	-0.9115
s^2(b1)	2.66E-09	1.28E-12
s(b1)	5.16E-05	1.13E-06
t* (b1)	0.67	1.82
F*	0.2792	2.0223

(i) Regression coefficients for database Table 4.5 ''(C):

TABLE 5.4 (i)

DATE		r V /Income t t-1 (%) [Y var.]	Time Decay [X1 var.]	Portfolio Vol. [X2 var.]
09/30/94		0.00	1,214,830	39152.02
03/30/95		0.00	17,647,298	0.45
09/30/95	*	3547.16	1,672,553	-0.43
03/30/96		118.26	17,506,657	-0.39
09/30/96		201.55	20,026,534	0.02
03/30/97		314.35	18,017,420	-0.03
09/30/97		113.69	25,530,435	0.08
03/30/98		133.87	26,808,699	-0.39
09/30/98		162.96	26,434,622	0.08
03/30/99	*	4948.38	18,216,586	-0.22
09/30/99		-38.55	779	-0.27
03/30/00		100.01	0	0.00

COLUMNS	A	B
MSE	3,109,297	9,782.76
MSR	812,379	15,740.27
R^2	0.0549	0.3149
Adj. R^2	-0.1552	0.1192
R	0.2343	0.5612
DW	2.5050	1.9308
s^2(b2)	0.002213	7.09E-06
s(b2)	0.047040	0.002663
t* (b2)	-0.7050	-0.4880
s^2(b1)	2.48E-09	9.16E-12
s(b1)	4.98E-05	3.03E-06
t* (b1)	-0.59	1.52
F*	0.2613	1.6090

The results of the primary regressions for Tables 5.4 (g), (h) and (i) are in Column A of the respective tables. In all three cases, the DW is between the two-tailed 95% confidence critical level of 0.95 and 3.05, and suggests the absence of serial correlation. The poor adjusted (R^2) are not consistent with the results of the earlier regressions. In all cases, one or perhaps two observations appear to explain the very poor adjusted (R^2). These are denoted by the * sign and once they are deleted, and the regressions re-run, the adjusted (R^2) improve dramatically in Column B of all three regression results. The critical values for the t and F statistic at 95% confidence are: $t(0.975,9) = 2.262$ and $F(0.95,2,9) = 4.26$. These levels are used to compare Column B results even though the number of observations have been reduced by one or two, depending on

the particular table. The F* in all three tables in Column B leads to the acceptance of the null hypothesis at 95% confidence that the true coefficients B1 and B2 equal zero. The |t*| in Column B of both Tables 5.4 (h) and (i) confirm the conclusion drawn from the F*, although in the case of Table 5.4 (g), the |t*| for b1 and b2 are 2.45 and 4.2252 respectively, which leads to the rejection of the null hypothesis that both the true coefficients B1 and B2 are zero.

General comments on Section 5.4 results:

The results in Section 5.4 overall, suggest the presence of a relationship between the proportion of current and non-current income in economic income, and portfolio delta and theta. The (R^2) measures appear to be reasonably consistent across regressions with the exception of a few in which one or at most two observations are outliers. Although one is tempted to discard these outliers from regressions, as is done in a few regressions, their presence and the absolute low (R^2) in almost all regressions, point to some difficulties with the volatility measures used, or with the specification of the model. As has been pointed out in Chapter Three, volatility measures are related to the concept of portfolio variance of returns. The academic literature itself, has attempted to formulate various measures for volatility in a range of studies. Additional regression work was done in this study in which delta and theta values were individually run against the proportion of current income in total economic income. Other measures of volatility such as the percentage change in portfolio value between one period and the next were also used as were measures of portfolio variance calculated as the deviation of actual returns from their mean. However, none produced satisfactory results. In fact, in almost all cases, the adjusted (R^2) was negligible with serial correlation among residuals being a major problem. Looking more closely at the specification of the model, there may be possibilities for improvement. We revisit the definition of current income as a proportion of overall economic income in (24):

$$(24) \qquad \frac{r\,V_{t-1}}{V_t - V_{t-1} + a_t}$$

and the non-current proportion of income in overall economic income in (25):

$$(25) \qquad y_t = \frac{V_t - (1+r)\,V_{t-1} + a_t}{V_t - V_{t-1} + a_t}$$

It becomes clear from the two equations, that the model shows a systematic bias in the treatment of positive income compared to negative income even

though they may be of the same magnitude. In equation (24), actual volatility is measured by $(V_t - V_{t-1})$. A positive change implies a large V_t and a relatively smaller V_{t-1}. A negative change implies the opposite. However, positive or negative changes of the same magnitude in $(V_t - V_{t-1})$ lead to assymmetric changes in the composition of current and non-current income in total income. A relatively large V_{t-1} compared to V_t means that $r_t V_{t-1}$ represents a larger proportion of total income in period t. On the other hand, a small V_{t-1} compared to V_t means precisely the opposite even though $|V_t - V_{t-1}| = |V_{t-1} - V_t|$. The model is non-neutral in its treatment of positive and negative value changes, and is perhaps a reason for the existence of outliers and the consequently low (R^2). The other source of the problem may concern the value of r_t itself. r_t is known at instant t-1 to be realised at instant t. However, if the rate r_t is much higher than the expected or actual change in value of the portfolio, then the optimal trading rule from the model is to 'close out' the portfolio at instant t-1 and invest the proceeds at the one-period r_t to instant t. This is not done in the Simulation Exercises as it is unlikely to hold in real life because of the significant transactions costs involved in 'closing out' and 're-opening' the positions at each time period. The model ignores the presence of transactions costs and is unable to handle this problem very well. This may also give rise to the presence of outliers in some regressions in this section. These are possible areas for improvement and require further developmental work.

5.5 CONCLUDING COMMENTS:

Throughout the study, there has been much emphasis put on concepts such as portfolio delta and theta. These terms have served as a central plank on which much of the regression work has been been built upon. Consideration of such concepts leads directly to a discussion of terms such as 'hedging' and 'trading' and the need for a unified tax base to treat all forms of income. 'Hedging' and 'trading' can be objectively defined only in terms of portfolio risk and return. The difference between the two terms is reflected in their differences in risk-return trade-off profiles. The higher the risk for a given set of portfolio cash flows, the more 'trading' or speculative characteristics inherent in portfolio income. A truly 'hedged' portfolio therefore is one that continues to lie on the minimum variance opportunity set yielding the minimum variance for a given rate of return. Treatment of such concepts in the context of analysing financial and derivative instrument income,

requires consideration of the appropriate measures to be used for risk and return. In this study, portfolio delta and theta are used as the risk measures as a proxy for variance, and economic income as the measure for returns. The focus on regression results based on high and low deltas is therefore an attempt to study the characteristics of income derived from portfolios that exhibit 'trading' and 'hedging' characteristics. It is conceded however, that superior measures for both concepts may yield much finer results.

The results demonstrate that a unified tax base and its assessment is possible to measure income from both 'trading' and 'hedging'. They show that the divergence between alternative rules to assess income becomes smaller as portfolio volatility declines. Differences in income assessments between alternative rules is a reflection of the speculative or 'trading' element of overall income. The introduction of the proposed model therefore, has been designed to identify both elements of portfolio income. The study rejects 'transactions based' or a 'single instrument approach' to defining terms such as 'hedging' and 'trading'. These concepts, while popular in the professional and legal literature, ignore the fact that each cash flow in a portfolio has both 'hedging' and 'trading' characteristics. These characteristics are not determined by the cash flow itself, but are dependant on the impact of the cash flow on overall portfolio returns and variance. The study also shows that transactions in which all cash flows are known at the outset, do not necessarily qualify as 'hedging'. A common example given of a 'hedged' transaction, and one often quoted in the professional literature, is that of a firm entering into an interest rate swap agreement to eliminate a particular variable rate exposure. Although the swap enables the firm to identify its future cash flows with certainty on the transaction at the outset, its effect on overall portfolio returns and variance remains variable through time.

CONCLUSION

The study has attempted to formulate an appropriate framework in which to provide answers to the key question of what constitutes income. The framework developed, has attempted to shift the focus from the current emphasis on legal definitions and accounting concepts, to ideas that have developed and been applied in finance theory and practice. This is no accident because the very origin of financial instruments and in particular, derivatives on financial instruments, is based on the evolvement of key concepts in finance theory. Very little recognition has been given to this to date and consequently the common attributes of financial instruments have been ignored. Instead, each financial instrument has been defined and legislated for, in its own right, giving users ample opportunities to enter into tax arbitrage transactions.

The study starts off by examining the nature of current debate which is shown to be often contradictory and piecemeal in its approach to dealing with the question of financial instruments. What is lost in current debate is a lack of appreciation of the most fundamental question on the purpose of financial instruments, which is to the management of, and towards the redistribution of, portfolio risk and return within a given portfolio. This purpose is independant of the labels put on particular financial instruments. Investors continually assess instruments to reach the desired point on the mean-variance efficient set. The desired point is unique for each investor and is determined by the marginal rate of substitution between his preference for risk and return and the different risk-return combinations available in the efficient set. The terms 'hedging' and 'trading' are accounting concepts that have been created to describe such concepts. However, they appear to give the impression that all points on the efficient set are either absolute 'hedging' or 'trading' portfolios. This is not the case, as the many examples in Chapter Two demonstrate. Indeed, the examples show portfolios exhibiting varying degrees of risk-return trade-offs with both 'trading' and 'hedging' characteristics.

The next stage in the process has been to develop a model that correcly assesses overall economic income as well as identifies the relative 'trading' and 'hedging' components of income. The development of a single model and its success in assessing overall income means that it is possible to have a unified tax base and its assessment. The model developed in our analysis has shown that divergence in income assessments between alternative rules becomes less as income increasingly shows characteristics of a 'hedging' nature. By this, it is meant that divergence in income assessments continues to be reduced as portfolio risk is reduced. In the Simulation Exercises, variables used to determine portfolio risk were constrained to levels close to zero by making appropriate variations in term structure rates each period, or by making appropriate changes to portfolio cash flow composition through time and consequently divergence between alternative income assessments reduced sharply. In reality, the reduction of portfolio risk to such low levels is possible only by changing portfolio cash flow composition. Therefore, financial instrument users who want to be classified as

'hedgers' should alter the cash flow composition of their portfolio to target a particular level of income volatility through time. Even then distinctions such as 'hedging' and 'trading' become irrelevent when a model can be found to be able to correctly assess economic income from the various types of financial instruments currently available.

The ability of the model to identify and separate income into its relative risk components is not as strong as originally anticipated however. This may be due to reasons pointed out earlier in Chapter Five. Improvements in terms of model re-specification and use of alternative measures to assess risk may lead to possible improvement in results. Neverthless, the contribution here should be recognised for its attempts to tackle the key questions of risk assessment and its relevance to the identification and measurement of economic income. Once these questions are successfully addressed, various other concepts flow on from this relating to the actual tax treatment of the gains and losses eminating from portfolio income from the different risk classes. Apart from the possibility of imposing differential taxation on the various income streams, it also leads to the consideration of other issues such as possible carry-forward of losses arising from the non-current component of income, for instance. This may lessen the tax burden on a wide range of users of financial instruments who are not very large and who currently oppose assessments on mark to market income because of the taxation of unrealised gains.

The framework developed in this study, opens up many more possibilities and ideas to the development of a comprehensive framework for the identification of the tax base on financial instrument income and its assessment for all users. Many of these ideas need much further development. This will only be possible if studies similar to this are undertaken to study the income profile on various financial transactions using much larger databases and more precise measures of variance involving attachment of probability weightings to various outcomes based on probable movements in term structure rates. The current approach of trying to develop more legislative definitions and concepts however, will continue to be counterproductive, as demonstrated earlier in Chapters One and Two.

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FOOTNOTES

1 For instance, refer to Exposure Draft (ED) 59, published by the Australian Research Foundation (AARF) with substantial input from the Australian Accounting Standards Board (AASB), March 1993.

2 Refer to the paper 'Taxation of Financial Transactions', A position paper on Current Problems and Concerns and Options for Reform, November 1991, by The Australian Bankers' Assoc., Australian Financial Markets Assoc., and The Australian Merchant Bankers' Assoc. Also refer to 'Taxation of Financial Arrangements', A Consultative Document, December 1993, by the Australian Tax Office.

3 Equation (14) in Chapter Three would be familiar to readers of the paper 'Optimization Problems In The Theory Of Continuous Trading', by Karatzas (1989). In it, Karatzas derives a framework for the general treatment of contingent claims pricing within the context of resolving the consumption/investment problem for a utility maximizing small investor with given initial wealth, and unable to influence market prices. In particular, the wealth equation in (3.4) has a similar interpretation to our proposed model in Chapter Three. It must be said however, that the objects of the two studies are very different. Karatzas more or less regards the underlying assumptions of the equation's ability to correctly assess economic income, as given. The equation instead, is used as the basis to derive optimal asset holdings for the investor and the income from such holdings, which then leads to the pricing of contingent claims. The object of this study, on the other hand, is to focus on the 'correctness' or otherwise, of income assessed under the proposed model and other alternative rules currently in use or proposed.

APPENDIX ONE

TABLE 2.2 (A)

DATE	Column A (Fwd Bank Bill Flows)	Column B (Futures Flows)	Column C (FRA Flows)
30-Jan-94	0	0	0
08-Jun-94	(487,837)	(487,837)	(487,837)
30-Jun-94			
07-Sep-94	500,000	500,000	500,000

TABLE 2.2 (B)

DATE	Column A (Bank Bill Flows)	Column B (Options Flows)
09-Mar-94	(476,253)	(476,227)
30-Jun-94		
07-Sep-94	500,000	500,038

TABLE 2.3 (A)

Forward Foreign Exchange Flows

DATE	AUD $ million	USD $ million	Implied Exchange Rate
30-Mar-94	(100.0)	75.0	(AUD $1.00 = US $0.75)
30-Jun-94	-	-	
30-Mar-95	-	-	
30-Jun-95	-	-	
30-Mar-96	-	-	
30-Jun-96	-	-	
30-Mar-97	118.71	(75.00)	(AUD $1.00 = US $0.6318)

TABLE 2.3 (B)

Zero-Coupon Bond Flows

DATE	AUD $ million	USD $ million	Implied Exchange Rate
30-Mar-94	(81.35)	61.01	(AUD $1.00 = US $0.75)
30-Jun-94	-	-	
30-Mar-95	-	-	
30-Jun-95	-	-	
30-Mar-96	-	-	
30-Jun-96	-	-	
30-Mar-97	118.71	(75.00)	(AUD $1.00 = US $0.6318)

Australian dollar zero-coupon proceeds are derived as follows:

$$\frac{118.71}{(1 + 13.0/200)^6} = 81.35$$

US dollar zero-coupon proceeds are derived as follows:

$$\frac{75.00}{(1 + 7.0/200)^6} = 61.01$$

TABLE 2.3 (C)

	Zero-Coupon Swap Flows				Floating/Floating Basis Swap	
DATE	AUD Fixed Interest Received $ mil	AUD Floating Interest Paid $ mil	USD Fixed Interes Paid $ mil	USD Floating Interest Received $ mil	AUD Floating Interest Received $ mil	USD Floating Interest Paid $ mil
30-Mar-94	37.36	-	(13.99)	-	(118.71)	75.00
30-Jun-94	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
30-Mar-95	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
30-Jun-95	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
30-Mar-96	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
30-Jun-96	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
30-Mar-97	-	(BBSW)	-	LIBOR	BBSW	(LIBOR)
					+118.71	+75.00

TABLE 2.3 (D)

Resultant Flows from TABLE 2.3 (C)
(BBSW and LIBOR payments/receipts are netted out)

DATE	AUD Flows $ mil	USD Flows $ mil	Implied Exchange Rate
30-Mar-94	(81.35)	61.01	(AUD $1.00 = US $0.75)
30-Jun-94	-	-	
30-Mar-95	-	-	
30-Jun-95	-	-	
30-Mar-96	-	-	
30-Jun-96	-	-	
30-Mar-97	118.71	75.00	(AUD $1.00 = US $0.6318)

TABLE 2.4 (A)

DATE	CASHFLOWS $ 000
09-Mar-81	45,370
06-Jun-81	(2,695)
06-Dec-81	(5,389)
06-Jun-82	(5,389)
06-Dec-82	(5,389)
06-Jun-83	(5,389)
06-Dec-83	(5,389)
06-Jun-84	(5,389)
06-Dec-84	(5,389)
06-Jun-85	(5,389)
06-Dec-85	(5,389)
06-Jun-86	(5,389)
06-Dec-86	(5,389)
06-Jun-87	(5,389)
06-Dec-87	(5,389)
06-Jun-88	(5,389)

TABLE 2.4 (B)

DATE	CASHFLOWS AUD $000	CASHFLOWS US $000
09-Mar-81	45,370	(34,028)
06-Jun-81	(2,695)	1,684
06-Dec-81	(5,389)	3,367
06-Jun-82	(5,389)	3,367
06-Dec-82	(5,389)	3,367
06-Jun-83	(5,389)	3,367
06-Dec-83	(5,389)	3,367
06-Jun-84	(5,389)	3,367
06-Dec-84	(5,389)	3,367
06-Jun-85	(5,389)	3,367
06-Dec-85	(5,389)	3,367
06-Jun-86	(5,389)	3,367
06-Dec-86	(5,389)	3,367
06-Jun-87	(5,389)	3,367
06-Dec-87	(5,389)	3,367
06-Jun-88	(5,389)	3,367

TABLE 2.5 (A)

SWAP DATABASE of BARCLAYS BANK AUSTRALIA LIMITED

AS AT 28 MARCH, 1991

MATURITY DATE	NOTIONAL PRINCIPAL ($ 000)	SWAP RATE (%)	*PERIODIC FREQUENCY	REC (R)/ PAID (P)
15-Apr-93	8,000	13.62	Q	R
25-Jan-93	10,000	14.44	Q	R
25-Jan-93	5,000	14.40	Q	R
25-Jan-93	10,000	14.87	Q	R
04-Jan-93	5,000	14.58	Q	P
04-Jan-93	5,000	14.63	Q	R
05-Jan-93	20,000	14.55	Q	R
05-Jan-93	10,000	14.52	Q	R
09-Jan-92	10,000	12.40	Q	R
23-Mar-92	5,000	14.74	Q	R
14-Feb-92	15,000	14.43	Q	R
10-Feb-92	5,000	15.06	Q	R
10-Feb-92	10,000	15.36	Q	R
24-Feb-92	10,000	14.87	Q	P
24-Feb-92	10,000	14.87	Q	P
03-Apr-92	50,000	16.00	A	P
15-Apr-92	20,000	13.27	A	R
15-Apr-92	25,000	13.62	Q	R
06-Apr-92	10,000	14.85	Q	P
06-Apr-92	10,000	14.78	Q	P
01-May-92	10,000	13.93	S	P
01-May-92	10,000	13.62	Q	R
25-May-92	5,000	14.68	Q	R
25-May-92	5,000	14.73	Q	R
11-Jun-92	15,000	13.50	Q	R
01-Jun-92	10,000	15.99	Q	P
27-Jul-92	20,000	14.29	S	P
15-Jul-92	5,000	13.96	S	P
15-Jul-92	20,000	14.06	Q	P
24-Aug-92	5,000	15.28	Q	P
24-Aug-92	5,000	15.27	Q	R
10-Aug-92	10,000	15.29	Q	P
10-Aug-92	10,000	15.27	Q	R
24-Aug-92	5,000	14.97	Q	R
31-Aug-92	10,000	14.69	Q	P
31-Aug-92	10,000	14.77	Q	R
01-Oct-92	10,000	13.26	Q	P
26-Oct-92	5,000	14.09	Q	P
27-Nov-92	5,000	14.64	Q	R
15-Feb-93	5,000	14.32	Q	P
25-Oct-93	5,000	13.86	Q	R

15-Feb-93	5,000	14.30	Q	P
01-Nov-93	10,000	13.10	Q	R
27-Sep-93	10,000	13.53	Q	R
13-Sep-93	5,000	13.50	Q	R
15-Sep-93	15,000	14.79	S	P
29-Mar-93	25,000	14.55	Q	R
22-Mar-93	10,000	14.62	Q	R
10-Jun-93	10,000	14.21	S	P
15-Jun-93	10,000	14.53	Q	P
15-Jun-93	20,000	14.42	Q	R
15-Jun-93	8,000	12.42	Q	R
24-May-93	7,000	13.62	Q	R
03-May-93	10,000	15.22	S	P
03-May-93	25,000	14.77	S	P
03-May-93	10,000	14.37	S	P
07-Jul-93	10,000	14.44	S	P
27-Apr-93	20,000	14.10	S	R
28-Apr-93	6,000	13.44	Q	R
26-Apr-93	5,000	14.96	Q	R
15-Dec-00	25,000	12.69	S	R
01-Nov-00	20,000	13.44	S	P
23-Feb-96	50,000	13.45	S	R
01-Feb-95	5,000	14.24	S	P
06-Feb-95	10,000	13.14	S	P
02-Feb-95	10,000	14.18	S	P
02-Feb-95	20,000	14.16	S	P
16-Mar-95	10,000	14.65	S	R
30-Mar-95	10,000	13.18	S	P
31-May-95	5,000	14.65	S	R
19-Apr-95	10,000	14.69	S	R
03-Apr-95	10,000	15.32	S	P
30-Oct-95	10,000	13.75	S	R
17-Jul-95	10,000	14.34	S	P
24-Jul-95	20,000	14.21	S	P
05-Jul-95	5,000	14.49	S	R
15-Sep-95	10,000	14.70	S	P
07-Sep-95	20,000	12.81	S	P
01-Sep-95	5,000	13.61	Q	R
07-Dec-95	10,000	13.16	Q	R
07-Dec-95	10,000	12.65	S	P
18-Dec-95	20,000	13.37	S	P
06-Nov-95	20,000	13.05	S	P
16-Nov-95	20,000	12.82	S	P
23-Nov-95	5,000	12.66	S	P
04-Oct-95	10,000	13.37	Q	R
26-Oct-95	5,000	13.31	S	P
24-Oct-95	5,000	13.34	S	P
04-Jan-94	10,000	12.63	S	P
11-Jan-94	10,000	14.32	S	P
01-Feb-94	30,000	13.01	A	R
23-Feb-94	10,000	15.62	S	R
05-Apr-94	10,000	13.33	Q	R
13-Apr-94	7,000	14.90	S	P
13-Apr-94	7,000	15.24	S	R
16-Mar-94	10,000	14.67	S	P
10-Mar-94	10,000	13.08	Q	P

09-Jun-94	5,000	13.33	Q	R
09-Jun-94	5,000	12.63	Q	R
05-Dec-94	10,000	14.47	S	P
04-Oct-94	5,000	13.36	Q	R
02-Aug-94	25,000	14.29	Q	P
15-Aug-94	10,000	14.78	S	P
15-Aug-94	10,000	15.31	Q	R
12-Jul-94	25,000	14.19	Q	R
01-Jul-94	10,000	12.66	S	P
27-Apr-93	20,000	13.88	S	P
15-Jul-93	10,000	14.14	S	P
01-Jul-93	10,000	13.85	Q	R
23-Feb-93	5,000	14.73	Q	R
21-Jun-93	14,000	13.33	M	R
15-Jun-93	10,000	11.67	Q	R
23-Aug-93	25,000	11.82	S	P
18-Feb-94	10,000	12.06	Q	P
15-Feb-94	10,000	11.83	Q	R
12-Feb-96	20,000	12.09	S	P
16-Sep-96	10,000	12.06	S	P
15-Mar-96	10,000	12.03	S	P
19-Mar-01	25,000	12.26	S	P
24-Sep-01	25,000	12.29	Q	R
24-Sep-01	25,000	12.21	S	P
30-Mar-98	10,000	12.15	S	P
09-Mar-93	17,000	13.53	S	P
09-Mar-93	58,000	13.53	S	P
08-Feb-93	30,000	14.65	Q	R
08-Feb-93	10,000	14.25	Q	R
12-Aug-92	5,000	14.25	S	R
01-Jul-92	13,688	13.49	Q	R
30-Mar-92	44,019	14.80	Q	R
05-Jan-93	10,000	14.52	Q	P
05-Jan-93	20,000	14.55	Q	P
08-Feb-93	75,000	15.16	A	P
08-Feb-93	30,000	15.16	A	R
08-Feb-93	10,000	14.78	Q	R
15-Sep-93	10,000	13.90	Q	R
15-Sep-93	5,000	13.90	Q	R
28-Jun-93	10,000	15.65	S	R
29-Dec-93	10,000	15.50	S	R
08-Sep-92	10,000	15.39	Q	R
28-Sep-92	10,000	14.37	Q	R
02-Feb-95	20,000	14.20	S	R
15-Sep-95	10,000	14.80	S	R
05-Jul-93	20,000	14.48	Q	R
09-Jul-92	5,000	14.42	Q	R
20-Jul-92	10,000	14.15	Q	R
22-May-92	5,000	15.51	Q	R
23-May-92	13,387	15.50	Q	R
16-Mar-92	4,321	14.77	Q	P
08-Feb-93	50,000	15.08	A	P
18-Oct-93	20,000	13.05	Q	R
24-Jul-92	10,000	14.10	Q	R
10-Sep-92	5,000	14.39	Q	R
01-Nov-93	10,000	13.04	Q	R

30-Mar-95	10,000	13.21	S	R
06-Feb-95	10,000	13.19	S	R
02-Apr-93	14,476	11.71	Q	R
17-Jan-94	40,000	12.84	Q	R
01-Feb-94	75,000	12.81	A	P
21-Nov-95	10,000	12.70	S	R
21-Nov-95	10,000	12.80	S	R
06-Mar-92	5,000	14.84	Q	R
04-Mar-92	10,000	14.81	Q	P
04-Mar-93	5,000	14.55	Q	R
16-Mar-93	5,000	14.55	Q	R
15-Mar-93	20,000	14.76	S	R
09-Mar-93	7,271	14.70	S	P
09-Mar-93	7,271	13.70	S	R
09-Mar-93	3,635	13.70	S	R
09-Mar-93	5,000	14.78	S	R
09-Mar-93	21,813	13.70	S	R
29-Jul-92	6,000	13.77	S	P
29-Jul-92	10,000	13.64	Q	P
15-Sep-93	10,000	13.45	S	P
15-Sep-93	10,000	13.51	S	R
09-Sep-93	8,000	13.71	S	P
09-Sep-93	5,000	13.62	S	R
10-Feb-92	25,000	14.38	Q	R
10-Feb-92	10,000	14.50	Q	R
10-Feb-92	5,000	15.00	Q	R
10-Feb-92	5,000	15.00	Q	R
22-Jun-92	5,000	13.04	Q	R
09-Sep-92	5,000	13.32	S	P
24-May-93	6,000	13.23	S	P
29-Jun-93	7,000	13.13	S	R
15-Jun-93	5,000	13.16	S	R
15-Jun-93	5,000	13.25	S	P
09-Jun-93	5,000	13.18	S	P
09-Jun-93	10,000	13.53	S	P
09-Jun-93	10,000	13.16	S	R
09-Jun-93	5,000	13.25	S	R
15-Apr-93	5,000	12.58	S	P
15-Apr-93	5,000	12.57	S	P
15-Apr-92	5,000	12.78	S	R
25-May-92	5,000	13.19	S	P
12-Aug-92	10,276	14.05	S	R
12-Aug-92	5,000	14.03	S	P
12-Aug-92	10,000	14.05	S	P
17-Mar-93	10,000	12.80	S	P
17-Mar-93	15,000	12.86	S	R
17-Mar-93	10,000	12.86	S	R
29-Jan-92	15,000	11.68	Q	R
08-Feb-01	15,000	12.15	S	R
01-Jul-99	5,000	12.96	S	R
16-Jan-96	15,000	12.93	S	R
06-Feb-96	10,000	12.18	S	P
11-Aug-95	50,000	11.95	Q	R
03-Feb-92	10,000	11.63	S	R
15-Jul-92	5,000	11.57	Q	R
08-Feb-93	5,000	11.71	Q	P

11-Mar-93	5,000	11.78	Q	R
23-Mar-92	15,000	15.23	Q	P
16-Mar-92	10,000	15.55	Q	R
16-Mar-92	10,000	15.61	Q	P
15-Dec-92	5,000	12.30	Q	R
14-Dec-92	10,000	14.89	Q	P
14-Dec-92	5,000	14.83	Q	P
14-Dec-92	10,000	13.32	Q	R
04-Sep-92	10,000	13.76	S	R
10-Sep-92	5,000	14.79	S	P
10-Sep-92	5,000	13.35	Q	P
07-Sep-92	5,000	14.50	Q	R
28-Sep-92	5,000	15.58	Q	P
01-Sep-92	5,000	15.76	S	R
08-Sep-92	10,000	15.28	Q	P
14-Sep-92	5,000	15.15	Q	P
15-Sep-92	5,000	14.95	Q	R
01-Nov-93	10,000	12.98	Q	P
01-Nov-93	10,000	12.96	Q	P
01-Nov-93	10,000	13.07	Q	P
09-Nov-93	15,000	12.46	Q	R
15-Nov-93	20,000	12.53	Q	R
09-Dec-93	5,000	13.29	Q	P
15-Dec-93	5,000	12.65	S	R
20-Dec-93	10,000	12.55	Q	P
21-Dec-93	15,000	12.69	Q	P
05-Oct-93	5,000	13.26	Q	P
18-Oct-93	40,000	12.99	Q	P
18-Oct-93	10,000	13.09	Q	R
19-Oct-93	10,000	13.07	Q	R
12-Mar-92	5,000	11.98	Q	R
09-Mar-92	5,000	15.12	Q	R
09-Mar-92	5,000	15.15	Q	R
09-Mar-92	20,000	14.85	Q	R
03-Nov-92	10,000	14.76	Q	R
27-Aug-93	5,000	13.23	Q	P
27-Aug-93	10,000	13.91	Q	R
13-Aug-93	10,000	13.92	Q	R
09-Aug-93	10,000	13.98	Q	P
09-Aug-93	20,000	14.00	Q	P
03-Aug-93	30,000	14.21	Q	P
03-Aug-93	10,000	14.32	S	P
03-May-93	10,000	14.81	S	P
25-May-93	5,000	13.15	S	P
21-May-93	5,000	14.64	Q	R
17-May-93	10,000	14.60	Q	R
10-May-93	10,000	14.65	Q	R
16-Mar-92	10,000	15.31	Q	P
12-Mar-92	5,000	14.40	Q	R
12-Mar-92	5,000	14.42	Q	R

TABLE 2.5 (B)

	28/03/91	30/04	31/05	28/06	31/07	30/08	30/09
O/v cash	12.0000	11.5500	11.0000	10.5500	10.4500	10.5000	9.6000
Cash to 1st Futures	11.7244	11.4882	10.7943	10.5313	10.3035	10.4887	9.5392
1st Bill F	88.88	89.06	89.70	89.90	90.04	89.87	90.72
2nd Bill F	88.96	89.36	89.98	89.71	90.08	90.08	90.74
3rd Bill F	88.78	89.34	89.99	89.24	89.82	90.06	90.54
4th Bill F	88.40	89.13	89.85	88.76	89.40	89.76	90.24
5th Bill F	88.01	88.81	89.53	88.36	88.88	89.43	89.95
6th Bill F	87.84	88.60	89.19	11.73	88.55	88.95	89.68
2 yr rate	11.8299	11.2848	10.6891	11.2026	10.8945	10.7302	9.9303
3 yr rate	12.0358	11.5213	11.0844	11.5007	11.3260	11.0999	10.2480
4 yr rate	12.0900	11.5700	11.0400	11.6300	11.4700	11.2100	10.4200
5 yr rate	12.1000	11.6000	11.1500	11.7000	11.5000	11.2700	10.5200
7 yr rate	12.1800	11.7800	11.3500	11.8000	11.6700	11.3100	10.7100
10 yr rate	12.2300	11.8500	11.5300	11.9400	11.7300	11.3700	10.8400

TABLE 2.5 (B) cont.

	31/10	29/11	31/12	31/01/92	27/02	31/03
O/v cash	9.5000	8.6500	8.6500	7.6500	7.5000	7.5000
Cash to 1st Futures	8.7576	8.6100	7.6983	7.5980	7.5092	7.5605
1st Bill F	91.67	91.83	93.26	92.53	92.53	92.60
2nd Bill F	91.92	92.31	93.47	92.56	92.53	92.47
3rd Bill F	91.91	92.32	93.35	92.26	92.31	92.16
4th Bill F	91.71	92.10	93.02	91.74	91.93	91.61
5th Bill F	91.39	91.57	92.48	91.09	91.29	90.90
6th Bill F	91.02	90.97	91.77	90.39	90.54	90.19
2 yr rate	8.7027	8.5903	7.4888	8.7129	8.7231	8.6516
3 yr rate	9.0092	8.9888	7.9888	9.3672	9.5821	9.5207
4 yr rate	9.2300	9.2400	8.3100	9.6600	9.8900	9.7300
5 yr rate	9.4600	9.4600	8.6200	9.9500	10.1400	10.0000
7 yr rate	10.0200	9.9700	9.3500	10.3800	10.5000	10.1800
10 yr rate	10.2300	10.2000	9.7500	10.6600	10.7000	10.3800

TABLE 2.5 (C)

DATE	DUE AND RECEIVABLE (Cash flow only) (AUD $000)	STRAIGHT LINE ACCRUALS (AUD $000)	MARK TO MKT ($V_t - V_{t-1} + a_t$) (AUD $000)
28-Mar-91	0	0	0
30-Apr-91	(4,237)	41	(422)
31-May-91	4,187	253	(995)
29-Jun-91	473	227	810
31-Jul-91	2,031	313	269
30-Aug-91	6,089	266	334
30-Sep-91	626	350	(2,003)
31-Oct-91	1,779	368	(2,986)
29-Nov-91	3,942	317	397
31-Dec-91	2,463	355	(2,758)
31-Jan-92	2,449	338	3,659
27-Feb-92	(17,832)	302	(2,918)
31-Mar-92	1,161	146	(1,079)
SUM	3,131	3,276	(7,693)

APPENDIX TWO

The methodology used in deriving zero term structures has a significant bearing on the valuation of real swap portfolios. Therefore, the contents of this Appendix are applicable to the valuation of the Barclays Bank swap portfolio in Chapter Two. The approach employed is built on current Australian market practices in the derivation of the Australian dollar swap zero-coupon yield curve. Because of the extended formulas and concepts used, the methodology is best described by the use of an example. The Table below takes a representative set of market rates from which the corresponding zero term structure rates are derived.

AS AT 28 MARCH,1991 - PERIOD 0

SWAP YIELD CURVES

Term	Date to Maturity	Input		Zero Rates
4	01-Apr-91	overnight Rate	12.0000	12.3589
77	13-Jun-91	Cash to 1st Fut.	11.7244	11.9237
91	12-Sep-91	1st Bill Fut.	11.1200	11.5721
91	12-Dec-91	2nd Bill Fut.	11.0400	11.4387
91	12-Mar-92	3rd Bill Fut.	11.2200	11.4229
91	11-Jun-92	4th Bill Fut.	11.6000	11.4942
91	10-Sep-92	5th Bill Fut.	11.9900	11.6097
91	10-Dec-92	6th Bill Fut.	12.1600	11.7170
731	28-Mar-93	2 Year Swap	11.8299	11.8558
915	28-Sep-93	2.5 Year Swap	11.9337	11.9678
1096	28-Mar-94	3 Year Swap	12.0358	12.0813
1280	28-Sep-94	3.5 Year Swap	12.0631	12.1077
1461	28-Mar-95	4 Year Swap	12.0900	12.1356
1645	28-Sep-95	4.5 Year Swap	12.0950	12.1370
1827	28-Mar-96	5 Year Swap	12.1000	12.1394
2011	28-Sep-96	5.5 Year Swap	12.1202	12.1634
2192	28-Mar-97	6 Year Swap	12.1400	12.1880
2376	28-Sep-97	6.5 Year Swap	12.1602	12.2139
2557	28-Mar-98	7 Year Swap	12.1800	12.2402
2741	28-Sep-98	7.5 Year Swap	12.1884	12.2494
2922	28-Mar-99	8 Year Swap	12.1967	12.2590
3106	28-Sep-99	8.5 Year Swap	12.2050	12.2695
3288	28-Mar-00	9 Year Swap	12.2133	12.2805
3472	28-Sep-00	9.5 Year Swap	12.2217	12.2922
3653	28-Mar-01	10 Year Swap	12.2300	12.3042

All market inputs are on a semi-annually effective basis, except for the

implied yields on the six bank bill futures contracts and short-dated physical cash rates. The bank bill futures contracts represent one-period implied forward rates on 90 day bank bill contracts. The overnight cash rate represents the physical cash rate to mature the next working day and the cash rate to the first futures contract represents the physical bill rate to the date of settlement of the first bank bill futures contract.

The pricing of Australian dollar swaps is generally divided into two sections; (i) the 'short-end', as it is called, which typically represents the 0 to 2 year part of the curve; and (ii) the 'long-end', which represents swaps with a maturity of greater than 2 years. The reasons for this division are to do with the part bank bills and bank bill futures contracts play in determining the shape of the 'short-end' swap yield curve. The nature of these contracts is such that they are (a) compounding instruments; (b) divisible into four quarterly periods; and (c) the underlying spot bank bill physical rates are used as the index on floating rate resets on swaps. Therefore, the pricing of 'short-dated' swaps is based on the 'futures strip' which itself is another term for the swap zero term structure. For liquidity reasons, only the first six bank bill futures contracts are recognised. 'Long-end' par yields from 2 years onwards, imply a paying or receiving of fixed coupons at fixed intervals through to maturity. The calculation of zero-coupon rates for periods 2 years or greater, therefore involves 'stripping' out these coupon payments implied in longer-dated yields.

The first task therefore, is to derive short-end zero rates for periods upto 2 years, using the physical cash rate and the implied yields on the first six bank bill futures contracts.

SECTION (A): DERIVATION OF SHORT-END ZERO RATES:

EXAMPLE (i): Derivation of the September, 12 1991 zero rate:

			Market Input
(a)	Par yield (28/3/91 to 13/6/91)	:	11.7244
(b)	Implied bill futures yield (13/6/91 to 12/9/91)	:	11.1200

Zero rate to 12/9/91 (Z_1):

$$p_1 = [\ (1+(11.7244/100*(13/6/91-\text{Spot date})/365)) * (1+(11.12/100*91/365))\ ]$$

and

$$Z_1 = (((p_1)\ ^{\wedge}(182.5/(12/9/91-\text{Spot date}))) -1) *200 = 11.5721$$

where spot date is 28/3/91.

The Overnight cash rate, while not used here, is neverthless important because it provides a benchmark from interpolating zero rates between the spot date and the maturity date of the first physical bill contract.

EXAMPLE (ii): Deriving the December, 12 1991 zero rate (Z_2):

An additional input is required of:

(b) Implied bill futures yield (12/9/91 to 12/12/91) : 11.0400

And therefore,

$p_2 = [\ p_1 * (1+(11.04/100*91/365))\ ]$

and

$Z_2 = (((p_2)\ \hat{}\ (182.5/(12/12/91\text{-Spot date}))) -1) *200 = 11.4387.$

and so on till the zero-rate for 10 December 1991, which represents the maturity date of the last bank bill futures contract, is derived.

From the Z_0, Z_1, Z_2, Z_4, Z_5 and Z_6, we can derive the six-month zero rate $R_{0,0}$ (which is also the one-period floating interest rate r_1, refer to the notations in Chapter 3), the one year zero rate $R_{1,0}$ and the 1.5 year zero rate $R_{1.5,0}$, as at 28 March 1991. This is done by a simple straight line interpolation between the Z_0, Z_1, ...Z_6.

SECTION (B): DERIVATION OF LONG-END ZERO RATES:

The derivation of the longer-dated zero rates is relatively straightforward. To illustrate, we derive the zero-coupon rate for the 2 year maturity, by examining the valuation basis of a swap of unit face value, paying fixed coupons c and with the full 2 years to run (ie. four semi-annual periods). The valuation is conducted at historical time 0 on 28 March 1991, and the valuation formula is shown below:

$$V_0 = \frac{c}{1+r_1} + \frac{c}{(1+R_{1,0})^2} + \frac{c}{(1+R_{1.5,0})^3} + \frac{c+1}{(1+R_{2,0})^4}$$

where $V_0 = 1$ and $c = (2 \text{ year par yield rate} * \text{Face value})$

$$= \frac{11.8299}{200} * 1$$

As we already know r_1, $R_{1,0}$, and $R_{1.5,0}$, we solve for $R_{2,0}$ from the this equation. This iteration process continues till we construct the entire set of zero rates for the curve.

A final note concerns the par yields themselves. The swap database only records longer-dated par rates for the 2,3,4,5,7 and 10 year part of the yield curve. All par rates in between, are derived by a straight line interpolation of the given par rates. This is in accordance with current Australian market practice. For other practices concerning this particular issue refer to the paper by Frishling, Kameron and Stramandinoli (1994).

APPENDIX THREE

The methodology used in deriving portfolio delta and theta values is shown in a one-period context for a single interest rate swap. At time t = 0, the following swap is introduced to the portfolio:

Face Value : AUD 100,000,000.00
Fixed rate: 10.00% on a semi-annual basis.
Term: 2 Years

Table One

At time t = 0

Number Of Days	Fixed Cash Flows $	Floating Cash Flows $	Zero Rates (R)	V t $	New Zero Rates (R1)	V' t $
0	(100,000,000)	100,000,000	6.5000	0	6.4900	0
182.5	5,000,000	(103,400,000)	6.8000	(95,164,410)	6.7900	(95,169,012)
365	5,000,000		7.5000	4,645,086	7.4900	4,645,534
547.5	5,000,000		8.2991	4,425,861	8.2891	4,426,499
730	105,000,000		10.1768	86,093,464	10.1668	86,109,850
			Net	0		12,871

Portfolio delta at time t = 0 is $(V'_t - V_t)$, which equates to:

12,871

Both V_t and V'_t are derived from equations (2) in Chapter Three.

The 'New Zero Rates' (R1) represent a shift in each original zero term structure rate by one basis point ie. $R1_i = R_i - 0.01$, where i represents semi-annual periods 0,1,..,T-1.

For daily data, the procedure is identical, except that i is now 0,1,2, 3,.....,T-1 days and the zero rates are the daily semi-annual rates.

Calculation of portfolio theta values is shown in Table Two.

Table Two

At time t = 0

Number Of Days	Fixed Cash Flows $	Floating Cash Flows $	Zero Rates (R)	V t $	New Zero Rates (R*)	V' t $
0	(100,000,000)	100,000,000	6.5000	0	0.0000	0
182.5	5,000,000	(103,400,000)	6.8000	(95,164,410)	6.5000	(95,319,367)
365	5,000,000		7.5000	4,645,086	6.8000	4,677,443
547.5	5,000,000		8.2991	4,425,861	7.5000	4,478,095
730	105,000,000		10.1768	86,093,464	8.2991	89,259,913
			Net	0		3,096,084

Before theta is calculated, an assumption has to be made regarding the shape of the time t = 0 term structure curve. In this example, as with all Simulation Exercises in the study, the curve is assumed to be shaped in the form of a staircase. The rational for this is to not have to make unnecessary assumptions regarding the slope of the term structure curve and the rates that fall between the semi-annual periods. V'_t is calculated as follows:

$$NPV'_t = \sum_{i=0}^{T-1} \frac{X_i}{(1 + R^*_{it+1})^{(i-(1/182.5)+1)}} \qquad (1)$$

where X_i represents the ith cash flow known at time t = 0, and R^*_{it+1} represents the ith new zero rate at time t = 0. i is measured in semi-annual periods 0, 1, 2, 3, ...etc. to maturity. The calculation of R^* for i = 0 to T-1 (T is the instant at maturity) is relatively straight forward, once the assumption on the shape of the term structure curve has been made.

If the term structure curve was assumed to be positively sloping in a smooth fashion, then R^*_i would be calculated as follows:

$$R^*_i = R_{i+1} - \frac{R_{i+1} - R_i}{182.5} \qquad (2)$$

Equation (2) represents the daily straight line interpolation method that is currently used in the Australian market. However, because a step curve has been assumed in this analysis, R^*_i is simply:

$$R^*_i = R_{i-1} \qquad (3)$$

Theta at time t = 0 is derived as $(V'_t - V_t)$ from Table Two.

Theta = 3,096,084

For daily data, the procedure is repeated but i is now 0,1,2,..., T-1 days. The demonstration of calculating delta and theta values is complete.

APPENDIX FOUR

SINGLE INTEREST RATE SWAP PORTFOLIO: (SECTION 4.2 - CHAPTER FOUR):

TABLE 4.2 (A)

AS AT

	06/30/95	12/30/95	06/30/96	12/30/96	06/30/97	30/12/97
06/30/95	5.5759					
12/30/95	6.8307	6.3481				
06/30/96	7.8255	7.8072	8.6822			
12/30/96	8.6290	8.4055	8.5992	10.4631		
06/30/97	9.2838	8.9775	8.5948	10.0393	13.9634	
12/30/97	9.6006	10.0900	8.5934	9.6091	13.3446	9.7279
06/30/98	9.9260	10.2353	8.4946	8.8452	12.6482	11.7460

A data set comprising of income assessments under each of the three alternative rules and the proposed model is derived. This is shown in Tables 4.2 (B). Table 4.2 (C) also shows the accompanying delta and theta values for the portfolio.

TABLE 4.2 (B)

DATE	Due and Receivable A$	St. Line Accruals A$	Economic Income A$	V t A$	r t (%)
06/30/95	0	0	0	0	0.0000
12/30/95	1,488,732	1,488,732	769,830	(718,902)	6.8307
06/30/96	999,136	999,136	4,060,827	2,342,788	7.8072
12/30/96	602,023	602,023	(486,979)	1,253,785	8.5992
06/30/97	(119,339)	(119,339)	(3,986,875)	(2,613,752)	10.0393
12/30/97	(1,777,156)	(1,777,156)	(80,041)	(916,636)	13.3446
06/30/98	(970,319)	(970,319)	(53,682)	0	11.7460
Net	223,078	223,078	223,078		

TABLE 4.2 (C)

DATE	r V t t-1 A$	y t A$	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A$	Prtfolio Delta A$
06/30/95	0	0	0.00	0.00	335,969	25,438
12/30/95	0	769,830	0.00	100.00	(235,546)	21,495
06/30/96	(28,140)	4,088,967	-0.69	100.69	(130,036)	18,321
12/30/96	101,007	(587,986)	-20.74	120.74	(831,538)	13,871
06/30/97	62,763	(4,049,639)	-1.57	101.57	(330,599)	8,943
12/30/97	(174,875)	94,834	218.48	-118.48	(9,037)	4,667
06/30/98	(53,686)	4	100.01	-0.01	0	0
Net	(92,931)	316,009				

TABLE 4.2 '(B)

DATE	Due and Receivable A$	St. Line Accruals A$	Mark to Market A$	V t A$	r t (%)
06/30/95	0	0	515,103	515,103	0.0000
12/30/95	100,274	100,274	21,425	436,255	6.8307
06/30/96	100,274	100,274	24,640	360,621	7.8072
12/30/96	100,274	100,274	13,510	273,858	8.5992
06/30/97	99,726	99,726	8,069	182,201	10.0393
12/30/97	100,274	100,274	12,282	94,209	13.3446
06/30/98	99,726	99,726	5,517	0	11.7460
Net	600,548	600,548	600,548		

TABLE 4.2 '(C)

DATE	r V t t-1 A$	y t A$	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A$	Prtfolio Delta A$
06/30/95	0	515,103	0.00	100.00	4,983	83
12/30/95	17,641	3,785	82.34	17.66	4,077	60
06/30/96	17,076	7,564	69.30	30.70	(120)	42
12/30/96	15,548	(2,037)	115.08	-15.08	(1,444)	26
06/30/97	13,709	(5,640)	169.89	-69.89	(782)	13
12/30/97	12,190	92	99.25	0.75	929	4
06/30/98	5,518	(0)	100.01	-0.01	0	0
Net	81,682	518,866				

MULTI-INTEREST RATE SWAP PORTFOLIO: (SECTION 4.3 - CHAPTER FOUR):

TABLE 4.3 (A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.8194				
09/30/95	7.8209	7.8209	7.8209			
03/30/96	8.6212	8.6212	8.6212	8.6212		
09/30/96	9.2838	9.2838	9.2838	9.2838	9.2838	
03/30/97	9.5971	9.5971	9.5971	9.5971	9.5971	9.5971
09/30/97	9.9260	9.9260	9.9260	9.9260	9.9260	9.9260
03/30/98	10.3776	10.3776	10.3776	10.3776	10.3776	10.3776
09/30/98	10.8512	10.8512	10.8512	10.8512	10.8512	10.8512
03/30/99	11.4633	11.4633	11.4633	11.4633	11.4633	11.4633
09/30/99	12.1127	12.1127	12.1127	12.1127	12.1127	12.1127
30/03/00	12.2794	12.2794	12.2794	12.2794	12.2794	12.2794
30/09/00	12.4591	12.4591	12.4591	12.4591	12.4591	12.4591

TABLE 4.3 (A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	9.9260					
03/30/98	10.3776	10.3776				
09/30/98	10.8512	10.8512	10.8512			
03/30/99	11.4633	11.4633	11.4633	11.4633		
09/30/99	12.1127	12.1127	12.1127	12.1127	12.1127	
30/03/00	12.2794	12.2794	12.2794	12.2794	12.2794	12.2794
30/09/00	12.4591	12.4591	12.4591	12.4591	12.4591	12.4591

TABLE 4.3 (B)

Summary of Portfolio Results

DATE	Due and Receivable $,000	St Line Accruals $,000	Mark to Market $,000	V t $,000	r t (%)
09/30/94	0	0	0	0	6.8194
03/30/95	3,316	3,316	(213)	(3,529)	6.8194
09/30/95	3,883	3,883	166	(7,246)	7.8209
03/30/96	4,245	4,245	435	(11,056)	8.6212
09/30/96	4,630	4,630	639	(15,046)	9.2838
03/30/97	3,390	3,390	59	(18,376)	9.5971
09/30/97	2,941	2,941	(580)	(21,897)	9.926
03/30/98	2,224	2,224	(1,407)	(25,528)	10.3776
09/30/98	1,548	1,548	(2,377)	(29,452)	10.8512
03/30/99	466	466	(3,632)	(33,549)	11.4633
09/30/99	(13,484)	(13,484)	(2,782)	(22,847)	12.1127
30/03/00	(13,016)	(13,016)	(1,838)	(11,669)	12.2794
30/09/00	(12,402)	(12,402)	(733)	0	12.4591
NET	(12,261)	(12,261)	(12,261)		

TABLE 4.3 (C)

Summary of Portfolio Results

DATE	r V t t-1 $,000	y t $,000	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0	0	4,889,588	3
03/30/95	0	(213)	0	100	5,603,187	4,747
09/30/95	(139)	305	(84)	184	5,711,709	9,771
03/30/96	(311)	746	(72)	172	5,843,938	15,194
09/30/96	(517)	1,157	(81)	181	5,280,166	2,934
03/30/97	(716)	775	(1,206)	1,306	4,126,904	(10,971)
09/30/97	(920)	340	159	(59)	2,706,274	(25,206)
03/30/98	(1,127)	(280)	80	20	1,310,909	(40,251)
09/30/98	(1,396)	(980)	59	41	(468,940)	(57,336)
03/30/99	(1,674)	(1,957)	46	54	19,858	(41,141)
09/30/99	(2,049)	(733)	74	26	(467,765)	(23,917)
30/03/00	280,035	(281,873)	(15,239)	15,339	(13,771)	(554)
30/09/00	0	(733)	0	100	0	0
NET	271,186	(283,446)				

TABLE 4.3 '(A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.5000				
09/30/95	7.8209	6.5000	6.5000			
03/30/96	8.6212	6.5000	6.5000	6.5000		
09/30/96	9.2838	180.0000	180.0000	180.0000	180.0000	
03/30/97	9.5971	180.0000	180.0000	180.0000	180.0000	180.000
09/30/97	9.9260	240.0000	240.0000	240.0000	240.0000	240.000
03/30/98	10.3776	240.0000	240.0000	240.0000	240.0000	240.000
09/30/98	10.8512	240.0000	240.0000	240.0000	240.0000	240.000
03/30/99	11.4633	240.0000	240.0000	240.0000	240.0000	240.000
09/30/99	12.1127	240.0000	240.0000	240.0000	240.0000	240.000
30/03/00	12.2794	240.0000	240.0000	240.0000	240.0000	240.000
30/09/00	12.4591	240.0000	240.0000	240.0000	240.0000	240.000

TABLE 4.3 '(A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	240.0000					
03/30/98	240.0000	240.0000				
09/30/98	240.0000	240.0000	240.0000			
03/30/99	240.0000	240.0000	240.0000	240.0000		
09/30/99	240.0000	240.0000	240.0000	240.0000	240.0000	
30/03/00	240.0000	240.0000	240.0000	240.0000	240.0000	240.000
30/09/00	240.0000	240.0000	240.0000	240.0000	240.0000	240.000

TABLE 4.3 '(B)

Summary of Portfolio Results

DATE	Due and Receivable $,000	St Line Accruals $,000	Mark to Market $,000	V t $,000	r t (%)
09/30/94	0	0	0	0.00	6.8194
03/30/95	3,316	3,316	50,895	47,578.38	6.8194
09/30/95	3,208	3,208	(44,873)	(503.09)	6.5000
03/30/96	3,173	3,173	(86,939)	(90,615.13)	6.5000
09/30/96	91,808	91,808	(80,365)	(262,788.65)	180.000
03/30/97	(232,115)	(232,115)	(227,940)	(258,614.02)	180.000
09/30/97	(343,499)	(343,499)	(314,630)	(229,745.10)	240.000
03/30/98	(337,898)	(337,898)	(271,830)	(163,676.91)	240.000
09/30/98	(343,499)	(343,499)	(199,417)	(19,595.16)	240.000
03/30/99	(377,713)	(377,713)	(24,010)	334,107.93	240.000
09/30/99	430,299	430,299	405,965	309,774.61	240.000
30/03/00	425,621	425,621	369,256	253,409.56	240.000
30/09/00	561,126	561,126	307,716	0.00	240.000
NET	(116,174)	(116,174)	(116,174)		

TABLE 4.3 '(C)

Summary of Portfolio Results

DATE	r V t t-1 $,000	y t $,000	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0	0	4,889,588	3
03/30/95	0	50,895	0	100	(289,913,599)	818
09/30/95	1,559	(46,432)	(3)	103	(250,992,962)	(174)
03/30/96	(16)	(86,923)	0	100	(82,187,569)	(1,700)
09/30/96	(82,224)	1,858	102	(2)	349,364	(5,652)
03/30/97	(234,566)	6,626	103	(3)	(47,246,582)	(4,053)
09/30/97	(312,888)	(1,742)	99	1	(994,718)	(2,599)
03/30/98	(273,428)	1,598	101	(1)	(708,665)	(1,191)
09/30/98	(198,027)	(1,391)	99	1	(84,840)	(1,870)
03/30/99	(23,321)	(689)	97	3	1,446,574	5,712
09/30/99	404,225	1,740	100	0	1,341,219	4,458
30/03/00	370,711	(1,455)	100	(0)	1,097,177	5,807
30/09/00	306,591	1,125	100	0	0	0
NET	(41,384)	(74,790)				

TIME VALUE AND INCOME ASSESSMENT FROM A MULTI-SWAP PORTFOLIO: (SECTION 4.4 - CHAPTER FOUR):

TABLE 4.4 (A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.8194				
09/30/95	7.8209	6.8194	6.8194			
03/30/96	8.6212	7.8209	6.8194	6.8194		
09/30/96	9.2838	8.6212	7.8209	6.8194	6.8194	
03/30/97	9.5971	9.2838	8.6212	7.8209	6.8194	6.8194
09/30/97	9.9260	9.5971	9.2838	8.6212	7.8209	6.8194
03/30/98	10.3776	9.9260	9.5971	9.2838	8.6212	7.8209
09/30/98	10.8512	10.3776	9.9260	9.5971	9.2838	8.6212
03/30/99	11.4633	10.8512	10.3776	9.9260	9.5971	9.2838
09/30/99	12.1127	11.4633	10.8512	10.3776	9.9260	9.5971
30/03/00	12.2794	12.1127	11.4633	10.8512	10.3776	9.9260
30/09/00	12.4591	12.2794	12.1127	11.4633	10.8512	10.3776

TABLE 4.4 (A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	6.8194					
03/30/98	6.8194	6.8194				
09/30/98	7.8209	6.8194	6.8194			
03/30/99	8.6212	7.8209	6.8194	6.8194		
09/30/99	9.2838	8.6212	7.8209	6.8194	6.8194	
30/03/00	9.5971	9.2838	8.6212	7.8209	6.8194	6.8194
30/09/00	9.9260	9.5971	9.2838	8.6212	7.8209	6.8194

Portfolio results are Table 4.4 (B) and (C) and the daily results are in Table 4.4 (D) in Appendix Four.

TABLE 4.4 (B)

Summary of Portfolio Results

DATE	Due and Receivable $,000	St Line Accruals $,000	Mark to Market $,000	V t $,000	r t (%)
09/30/94	0	0	0	0	6.8194
03/30/95	3,316	3,316	4,897	1,581	6.8194
09/30/95	3,371	3,371	3,619	1,829	6.8194
03/30/96	3,335	3,335	(2,524)	(4,030)	6.8194
09/30/96	3,371	3,371	(1,453)	(8,854)	6.8194
03/30/97	7,229	7,229	(501)	(16,583)	6.8194
09/30/97	7,619	7,619	1,878	(22,323)	6.8194
03/30/98	7,494	7,494	1,062	(28,756)	6.8194
09/30/98	7,619	7,619	(1,964)	(38,339)	6.8194
03/30/99	8,151	8,151	(10,582)	(57,072)	6.8194
09/30/99	(23,792)	(23,792)	(9,461)	(42,741)	6.8194
30/03/00	(23,533)	(23,533)	(6,524)	(25,733)	6.8194
30/09/00	(26,617)	(26,617)	(885)	0	6.8194
NET	(22,438)	(22,438)	(22,438)		

TABLE 4.4 (C)

Summary of Portfolio Results

DATE	r V t t-1 $,000	y t $,000	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0	0	4,889,588	3
03/30/95	0	4,897	0	100	3,200,633	7,315
09/30/95	54	3,565	2	98	(4,031,988)	13,797
03/30/96	62	(2,586)	(2)	102	(2,718,087)	16,840
09/30/96	(139)	(1,314)	10	90	(1,365,111)	1,733
03/30/97	(299)	(201)	60	40	2,385,338	(14,139)
09/30/97	(570)	2,448	(30)	130	3,587,299	(29,262)
03/30/98	(755)	1,816	(71)	171	3,821,868	(44,727)
09/30/98	(989)	(976)	50	50	(5,370,755)	(62,047)
03/30/99	(1,297)	(9,286)	12	88	(4,908,952)	(45,213)
09/30/99	(1,962)	(7,499)	21	79	(4,910,615)	(26,375)
30/03/00	(1,453)	(5,071)	22	78	(4,728)	(1,254)
30/09/00	(885)	0	100	0	0	0
NET	(8,233)	(14,207)				

ZERO DELTA VALUES AND THE ASSESSMENT OF INCOME FROM A SINGLE SWAP:

SECTION 4.5 - (CHAPTER FOUR):

TABLE 4.5 (A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.8194				
09/30/95	7.8209	7.8209	7.8209			
03/30/96	8.6212	8.6212	8.6212	8.6212		
09/30/96	9.2838	9.2838	9.2838	9.2838	9.2838	
03/30/97	9.5971	9.5971	9.5971	9.5971	9.5971	9.5971
09/30/97	9.9260	9.9260	9.9260	9.9260	9.9260	9.9260
03/30/98	10.3776	10.3776	10.3776	10.3776	10.3776	10.3776
09/30/98	10.8512	10.8512	10.8512	10.8512	10.8512	10.8512
03/30/99	11.4633	11.4633	11.4633	11.4633	11.4633	11.4633
09/30/99	12.1127	12.1127	12.1127	12.1127	12.1127	12.1127
30/03/00	12.2794	12.2794	12.2794	12.2794	12.2794	12.2794

TABLE 4.5 (A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	9.9260					
03/30/98	10.3776	10.3776				
09/30/98	10.8512	10.8512	10.8512			
03/30/99	11.4633	11.4633	11.4633	11.4633		
09/30/99	12.1127	12.1127	12.1127	12.1127	12.1127	
30/03/00	12.2794	12.2794	12.2794	12.2794	12.2794	12.2794

TABLE 4.5 (B)

DATE	Due and Receivable $	St Line Accruals $	Mark to Market $	V t $	r t (%)
09/30/94	0	0	0	0	6.8194
03/30/95	2,779,557	2,779,557	2,354,292	(425,264)	6.8194
09/30/95	2,251,604	2,251,604	1,944,464	(732,404)	7.8209
03/30/96	1,773,395	1,773,395	1,574,034	(931,764)	8.6212
09/30/96	1,413,109	1,413,109	1,298,787	(1,046,087)	9.2838
03/30/97	1,213,379	1,213,379	1,177,256	(1,082,211)	9.5971
09/30/97	1,045,003	1,045,003	1,080,375	(1,046,838)	9.9260
03/30/98	773,358	773,358	880,050	(940,147)	10.3776
09/30/98	514,685	514,685	684,226	(770,606)	10.8512
03/30/99	161,162	161,162	384,299	(547,469)	11.4633
09/30/99	(208,337)	(208,337)	55,855	(283,277)	12.1127
30/03/00	(300,620)	(300,620)	(17,343)	0	12.2794
Net	11,416,294	11,416,294	11,416,294		

TABLE 4.5 (C)

DATE	r V t t-1 $	y t $	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0	0	1,214,830	39,152
03/30/95	0	2,354,292	0.00	100.00	538,855	36,045
09/30/95	(16,766)	1,961,230	-0.86	100.86	516,247	32,892
03/30/96	(31,484)	1,605,519	-2.00	102.00	466,921	29,495
09/30/96	(43,607)	1,342,394	-3.36	103.36	550,646	26,021
03/30/97	(49,785)	1,227,040	-4.23	104.23	438,599	22,235
09/30/97	(54,152)	1,134,527	-5.01	105.01	269,683	18,349
03/30/98	(53,872)	933,921	-6.12	106.12	146,341	14,120
09/30/98	(51,428)	735,654	-7.52	107.52	(31,906)	9,742
03/30/99	(43,806)	428,104	-11.40	111.40	(162,295)	4,988
09/30/99	(33,429)	89,285	-59.85	159.85	(313)	(13)
30/03/00	(17,345)	1	100.01	-0.01	0	0
Net	(395,673)	11,811,967				

TABLE 4.5 '(A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.8194				
09/30/95	7.8209	22.0000	22.0000			
03/30/96	8.6212	70.1398	5.5000	5.5000		
09/30/96	9.2838	105.9072	56.5830	25.0000	25.0000	
03/30/97	9.5971	112.7994	98.1325	72.5681	55.0000	55.0000
09/30/97	9.9260	103.5780	109.5948	107.2790	96.2876	10.0000
03/30/98	10.3776	91.0566	102.5377	113.3597	120.3701	60.3152
09/30/98	10.8512	80.1587	90.7713	103.7592	118.6330	100.293
03/30/99	11.4633	71.5820	80.0900	91.1062	105.4536	110.490
09/30/99	12.1127	64.8674	71.5672	80.1706	91.5692	102.829
30/03/00	12.2794	59.4900	64.8645	71.5845	80.2820	90.8513

TABLE 4.5 '(A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	10.0000					
03/30/98	45.0000	45.0000				
09/30/98	88.4900	90.0000	90.0000			
03/30/99	116.1263	122.8137	5.0000	5.0000		
09/30/99	116.9380	134.4039	56.1666	100.0000	100.0000	
30/03/00	104.9110	124.1444	97.8905	130.1927	11.7600	11.7600

TABLE 4.5 '(B)

DATE	Due and Receivable $,000	St Line Accruals $,000	Mark to Market $,000	V t $,000	r t (%)
09/30/94	0	0	0	0	6.8194
03/30/95	2,780	2,780	(86,087)	(88,866)	6.8194
09/30/95	(5,875)	(5,875)	(4,611)	(87,602)	22.0000
03/30/96	3,543	3,543	2,502	(88,642)	5.5000
09/30/96	(7,595)	(7,595)	(8,890)	(89,938)	25.0000
03/30/97	(24,386)	(24,386)	(21,161)	(86,712)	55.0000
09/30/97	1,003	1,003	33	(87,682)	10.0000
03/30/98	(18,748)	(18,748)	(18,703)	(87,637)	45.0000
09/30/98	(44,851)	(44,851)	(23,880)	(66,666)	90.0000
03/30/99	3,805	3,805	5,351	(65,121)	5.0000
09/30/99	(50,583)	(50,583)	14,532	(6)	100.000
30/03/00	(6)	(6)	(0)	0	11.7600
Net	(140,914)	(140,914)	(140,914)		

TABLE 4.5 '(C)

DATE	r V t t-1 $,000	y t $,000	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0.00	0.00	1,214,830	39,152
03/30/95	0	(86,087)	0.00	100.00	(7,552,366)	(76)
09/30/95	(9,856)	5,245	213.76	-113.76	9,088,884	(654)
03/30/96	(2,402)	4,905	-96.01	196.01	(10,454,704)	(740)
09/30/96	(11,171)	2,281	125.66	-25.66	(15,973,327)	(623)
03/30/97	(24,530)	3,369	115.92	-15.92	19,483,565	(1,743)
09/30/97	(4,371)	4,404	-13163.25	13263.25	(18,661,094)	(1,468)
03/30/98	(19,566)	864	104.62	-4.62	(21,564,319)	(1,353)
09/30/98	(39,761)	15,880	166.50	-66.50	54,297,630	(1,199)
03/30/99	(1,653)	7,004	-30.89	130.89	(41,650,835)	(994)
09/30/99	(32,828)	47,360	-225.90	325.90	1,691	(0)
30/03/00	(0)	0	100.01	-0.01	0	0
Net	(146,138)	5,224				

TABLE 4.5 ''(A)

DATE	Period 0 As At 09/30/94	Period 1 As At 03/30/95	Period 2 As At 09/30/95	Period 3 As At 03/30/96	Period 4 As At 09/30/96	Period 5 As At 30/3/97
09/30/94	6.8194					
03/30/95	6.8194	6.8194				
09/30/95	7.8209	7.8209	7.8209			
03/30/96	8.6212	35.0000	35.0000	35.0000		
09/30/96	9.2838	35.0000	35.0000	60.0000	60.0000	
03/30/97	9.5971	35.0000	35.0000	107.5681	90.0000	90.0000
09/30/97	9.9260	40.0000	45.0000	152.2790	141.2876	45.0000
03/30/98	10.3776	40.0000	45.0000	158.3597	165.3701	45.0000
09/30/98	10.8512	40.0000	45.0000	148.7592	163.6330	45.0000
03/30/99	11.4633	40.0000	45.0000	136.1062	150.4536	45.0000
09/30/99	12.1127	40.0000	45.0000	125.1706	136.5692	45.0000
30/03/00	12.2794	90.2300	90.6200	158.8045	168.1720	90.1900

TABLE 4.5 ''(A) cont.

DATE	Period 6 As At 09/30/97	Period 7 As At 03/30/98	Period 8 As At 09/30/98	Period 9 As At 03/30/99	Period 10 As At 09/30/99	Period 11 As At 30/03/00
09/30/94						
03/30/95						
09/30/95						
03/30/96						
09/30/96						
03/30/97						
09/30/97	45.0000					
03/30/98	45.0000	45.0000				
09/30/98	45.0000	45.0000	45.0000			
03/30/99	45.0000	45.0000	45.0000	45.0000		
09/30/99	45.0000	45.0000	45.0000	45.0000	45.0000	
30/03/00	92.3100	91.7400	91.2000	78.7000	11.7600	11.7600

TABLE 4.5 ''(B)

DATE	Due and Receivable $,000	St Line Accruals $,000	Mark to Market $,000	V t $,000	r t (%)
09/30/94	0	0	0	0	6.8194
03/30/95	2,780	2,780	(79,480)	(82,259)	6.8194
09/30/95	2,252	2,252	(91)	(84,602)	7.8209
03/30/96	(13,182)	(13,182)	(12,486)	(83,906)	35.0000
09/30/96	(13,327)	(13,327)	(12,592)	(83,171)	60.0000
03/30/97	(13,109)	(13,109)	(11,808)	(81,870)	90.0000
09/30/97	(19,058)	(19,058)	(16,336)	(79,147)	45.0000
03/30/98	(18,748)	(18,748)	(13,193)	(73,593)	45.0000
09/30/98	(19,058)	(19,058)	(10,245)	(64,779)	45.0000
03/30/99	(18,748)	(18,748)	(292)	(46,323)	45.0000
09/30/99	(19,058)	(19,058)	27,259	(6)	45.0000
30/03/00	(6)	(6)	(0)	0	11.7600
Net	(129,264)	(129,264)	(129,264)		

TABLE 4.5 ''(C)

DATE	r V t t-1 $,000	y t $,000	r V /Income t t-1 (%)	y /Incom t (%)	Prtfolio Theta A $	Prtfolio Delta A $
09/30/94	0	0	0.00	0.00	1,214,830	39,152
03/30/95	0	(79,480)	0.00	100.00	17,647,298	0
09/30/95	(3,243)	3,152	3547.16	-3447.16	1,672,553	(0)
03/30/96	(14,765)	2,279	118.26	-18.26	17,506,657	(0)
09/30/96	(25,379)	12,787	201.55	-101.55	20,026,534	0
03/30/97	(37,119)	25,311	314.35	-214.35	18,017,420	(0)
09/30/97	(18,572)	2,236	113.69	-13.69	25,530,435	0
03/30/98	(17,662)	4,468	133.87	-33.87	26,808,699	(0)
09/30/98	(16,694)	6,450	162.96	-62.96	26,434,622	0
03/30/99	(14,455)	14,163	4948.38	-4848.38	18,216,586	(0)
09/30/99	(10,508)	37,767	-38.55	138.55	779	(0)
30/03/00	(0)	0	100.01	-0.01	0	0
Net	(158,398)	29,135				

APPENDIX FIVE

TABLE 4.3 (D)

Summary of Portfolio Daily Results

r_t (%)	St. Line Accruals $	Mark to Market $	V_t $	Portfolio Delta $	Portfolio Theta $	$r_t V_{t-1}$ Income (%)
6.8194	0	0	0	(3)	4,889,588	0
6.8194	18,321	1,923	1,923	(2)	4,890,827	0
6.8194	18,321	(1,155)	769	(1)	4,892,065	-0
6.8194	18,321	(1,155)	(386)	0	4,893,303	-0
6.8194	18,321	(1,155)	(1,542)	1	4,894,541	0
6.8194	18,321	(1,156)	(2,697)	2	4,895,778	0
6.8194	18,321	(1,156)	(3,853)	3	4,897,016	0
6.8194	18,321	(1,156)	(5,010)	4	4,898,253	0
6.8194	18,321	(1,157)	(6,167)	5	4,899,489	0
6.8194	18,321	(1,157)	(7,324)	6	4,900,726	0
6.8194	18,321	(1,158)	(8,481)	7	4,901,962	0
6.8194	18,321	(1,158)	(9,639)	8	4,903,198	0
6.8194	18,321	(1,158)	(10,798)	9	4,904,433	0
6.8194	18,321	(1,159)	(11,956)	10	4,905,669	0
6.8194	18,321	(1,159)	(13,115)	10	4,906,904	0
6.8194	18,321	(1,159)	(14,275)	11	4,908,139	0
6.8194	18,321	(1,160)	(15,435)	12	4,909,373	0
6.8194	18,321	(1,160)	(16,595)	13	4,910,608	0
6.8194	18,321	(1,161)	(17,755)	14	4,911,842	0
6.8194	18,321	(1,161)	(18,916)	15	4,913,076	0
6.8194	18,321	(1,161)	(20,078)	16	4,914,309	0
6.8194	18,321	(1,162)	(21,239)	17	4,915,542	0
6.8194	18,321	(1,162)	(22,401)	18	4,916,775	0
6.8194	18,321	(1,162)	(23,564)	19	4,918,008	0
6.8194	18,321	(1,163)	(24,727)	20	4,919,240	0
6.8194	18,321	(1,163)	(25,890)	21	4,920,473	0
6.8194	18,321	(1,164)	(27,053)	22	4,921,704	0
6.8194	18,321	(1,164)	(28,217)	23	4,922,936	0
6.8194	18,321	(1,164)	(29,381)	23	4,924,167	0
6.8194	18,321	(1,165)	(30,546)	24	4,925,399	0
6.8194	18,321	(1,165)	(31,711)	25	4,926,629	0
6.8194	18,321	(1,165)	(32,877)	26	4,927,860	1
6.8194	18,321	(1,166)	(34,042)	27	4,929,090	1
6.8194	18,321	(1,166)	(35,208)	28	4,930,320	1
6.8194	18,321	(1,167)	(36,375)	29	4,931,550	1
6.8194	18,321	(1,167)	(37,542)	30	4,932,779	1
6.8194	18,321	(1,167)	(38,709)	31	4,934,008	1
6.8194	18,321	(1,168)	(39,877)	32	4,935,237	1
6.8194	18,321	(1,168)	(41,045)	33	4,936,466	1
6.8194	18,321	(1,168)	(42,213)	34	4,937,694	1

6.8194	18,321	(1,169)	(43,382)	35	4,938,922	1
6.8194	18,321	(1,169)	(44,551)	36	4,940,150	1
6.8194	18,321	(1,170)	(45,721)	37	4,941,378	1
6.8194	18,321	(1,170)	(46,891)	37	4,942,605	1
6.8194	18,321	(1,170)	(48,061)	38	4,943,832	1
6.8194	18,321	(1,171)	(49,232)	39	4,945,059	1
6.8194	18,321	(1,171)	(50,403)	40	4,946,285	1
6.8194	18,321	(1,171)	(51,574)	41	4,947,511	1
6.8194	18,321	(1,172)	(52,746)	42	4,948,737	1
6.8194	18,321	(1,172)	(53,918)	43	4,949,963	1
6.8194	18,321	(1,173)	(55,091)	44	4,951,188	1
6.8194	18,321	(1,173)	(56,264)	45	4,952,413	1
6.8194	18,321	(1,173)	(57,437)	46	4,953,638	1
6.8194	18,321	(1,174)	(58,611)	47	4,954,862	1
6.8194	18,321	(1,174)	(59,785)	48	4,956,086	1
6.8194	18,321	(1,174)	(60,959)	49	4,957,310	1
6.8194	18,321	(1,175)	(62,134)	50	4,958,534	1
6.8194	18,321	(1,175)	(63,309)	51	4,959,757	1
6.8194	18,321	(1,176)	(64,485)	51	4,960,980	1
6.8194	18,321	(1,176)	(65,661)	52	4,962,203	1
6.8194	18,321	(1,176)	(66,837)	53	4,963,426	1
6.8194	18,321	(1,177)	(68,014)	54	4,964,648	1
6.8194	18,321	(1,177)	(69,191)	55	4,965,870	1
6.8194	18,321	(1,177)	(70,368)	56	4,967,091	1
6.8194	18,321	(1,178)	(71,546)	57	4,968,313	1
6.8194	18,321	(1,178)	(72,724)	58	4,969,534	1
6.8194	18,321	(1,179)	(73,903)	59	4,970,755	1
6.8194	18,321	(1,179)	(75,082)	60	4,971,975	1
6.8194	18,321	(1,179)	(76,261)	61	4,973,195	1
6.8194	18,321	(1,180)	(77,441)	62	4,974,415	1
6.8194	18,321	(1,180)	(78,621)	63	4,975,635	1
6.8194	18,321	(1,181)	(79,802)	64	4,976,854	1
6.8194	18,321	(1,181)	(80,983)	65	4,978,073	1
6.8194	18,321	(1,181)	(82,164)	66	4,979,292	1
6.8194	18,321	(1,182)	(83,345)	66	4,980,511	1
6.8194	18,321	(1,182)	(84,528)	67	4,981,729	1
6.8194	18,321	(1,182)	(85,710)	68	4,982,947	1
6.8194	18,321	(1,183)	(86,893)	69	4,984,164	1
6.8194	18,321	(1,183)	(88,076)	70	4,985,382	1
6.8194	18,321	(1,184)	(89,259)	71	4,986,599	1
6.8194	18,321	(1,184)	(90,443)	72	4,987,816	1
6.8194	18,321	(1,184)	(91,628)	73	4,989,032	1
6.8194	18,321	(1,185)	(92,812)	74	4,990,248	1
6.8194	18,321	(1,185)	(93,998)	75	4,991,464	1
6.8194	18,321	(1,185)	(95,183)	76	4,992,680	1
6.8194	18,321	(1,186)	(96,369)	77	4,993,895	1
6.8194	18,321	(1,186)	(97,555)	78	4,995,110	2
6.8194	18,321	(1,187)	(98,742)	79	4,996,325	2
6.8194	18,321	(1,187)	(99,929)	80	4,997,539	2
6.8194	18,321	(1,187)	(101,116)	81	4,998,753	2
6.8194	18,321	(1,188)	(102,304)	82	4,999,967	2
6.8194	18,321	(1,188)	(103,492)	82	5,001,181	2
6.8194	18,321	(1,189)	(104,681)	83	5,002,394	2
6.8194	18,321	(1,189)	(105,869)	84	5,003,607	2
6.8194	18,321	(1,189)	(107,059)	85	5,004,819	2
6.8194	18,321	(1,190)	(108,248)	86	5,006,032	2

5.8194	18,321	(1,190)	(109,439)	87	5,007,244	2
5.8194	18,321	(1,190)	(110,629)	88	5,008,456	2
5.8194	18,321	(1,191)	(111,820)	89	5,009,667	2
5.8194	18,321	(1,191)	(113,011)	90	5,010,878	2
5.8194	18,321	(1,192)	(114,203)	91	5,012,089	2
5.8194	18,321	(1,192)	(115,395)	92	5,013,300	2
5.8194	18,321	(1,192)	(116,587)	93	5,014,510	2
5.8194	18,321	(1,193)	(117,780)	94	5,015,720	2
5.8194	18,321	(1,193)	(118,973)	95	5,016,930	2
5.8194	18,321	(1,194)	(120,167)	96	5,018,139	2
5.8194	18,321	(1,194)	(121,360)	97	5,019,348	2
5.8194	18,321	(1,194)	(122,555)	98	5,020,557	2
5.8194	18,321	(1,195)	(123,749)	98	5,021,765	2
5.8194	18,321	(1,195)	(124,945)	99	5,022,973	2
5.8194	18,321	(1,195)	(126,140)	100	5,024,181	2
5.8194	18,321	(1,196)	(127,336)	101	5,025,389	2
5.8194	18,321	(1,196)	(128,532)	102	5,026,596	2
5.8194	18,321	(1,197)	(129,729)	103	5,027,803	2
5.8194	18,321	(1,197)	(130,926)	104	5,029,010	2
5.8194	18,321	(1,197)	(132,123)	105	5,030,216	2
5.8194	18,321	(1,198)	(133,321)	106	5,031,422	2
5.8194	18,321	(1,198)	(134,519)	107	5,032,628	2
5.8194	18,321	(1,199)	(135,718)	108	5,033,833	2
5.8194	18,321	(1,199)	(136,917)	109	5,035,038	2
5.8194	18,321	(1,199)	(138,116)	110	5,036,243	2
5.8194	18,321	(1,200)	(139,316)	111	5,037,448	2
5.8194	18,321	(1,200)	(140,516)	112	5,038,652	2
5.8194	18,321	(1,201)	(141,716)	113	5,039,856	2
5.8194	18,321	(1,201)	(142,917)	114	5,041,059	2
5.8194	18,321	(1,201)	(144,119)	115	5,042,263	2
5.8194	18,321	(1,202)	(145,320)	116	5,043,466	2
5.8194	18,321	(1,202)	(146,522)	116	5,044,668	2
5.8194	18,321	(1,202)	(147,725)	117	5,045,871	2
5.8194	18,321	(1,203)	(148,928)	118	5,047,073	2
5.8194	18,321	(1,203)	(150,131)	119	5,048,274	2
5.8194	18,321	(1,204)	(151,334)	120	5,049,476	2
5.8194	18,321	(1,204)	(152,539)	121	5,050,677	2
5.8194	18,321	(1,204)	(153,743)	122	5,051,878	2
5.8194	18,321	(1,205)	(154,948)	123	5,053,078	2
5.8194	18,321	(1,205)	(156,153)	124	5,054,278	2
5.8194	18,321	(1,206)	(157,358)	125	5,055,478	2
5.8194	18,321	(1,206)	(158,564)	126	5,056,678	2
5.8194	18,321	(1,206)	(159,771)	127	5,057,877	2
5.8194	18,321	(1,207)	(160,978)	128	5,059,076	2
5.8194	18,321	(1,207)	(162,185)	129	5,060,274	2
5.8194	18,321	(1,208)	(163,392)	130	5,061,473	3
5.8194	18,321	(1,208)	(164,600)	131	5,062,671	3
5.8194	18,321	(1,208)	(165,808)	132	5,063,868	3
5.8194	18,321	(1,209)	(167,017)	133	5,065,066	3
5.8194	18,321	(1,209)	(168,226)	134	5,066,263	3
5.8194	18,321	(1,209)	(169,436)	134	5,067,459	3
5.8194	18,321	(1,210)	(170,646)	135	5,068,656	3
5.8194	18,321	(1,210)	(171,856)	136	5,069,852	3
5.8194	18,321	(1,211)	(173,067)	137	5,071,048	3
5.8194	18,321	(1,211)	(174,278)	138	5,072,243	3
5.8194	18,321	(1,211)	(175,489)	139	5,073,438	3

6.8194	18,321	(1,212)	(176,701)	140	5,074,633	3
6.8194	18,321	(1,212)	(177,913)	141	5,075,827	3
6.8194	18,321	(1,213)	(179,126)	142	5,077,021	3
6.8194	18,321	(1,213)	(180,339)	143	5,078,215	3
6.8194	18,321	(1,213)	(181,552)	144	5,079,409	3
6.8194	18,321	(1,214)	(182,766)	145	5,080,602	3
6.8194	18,321	(1,214)	(183,980)	146	5,081,795	3
6.8194	18,321	(1,215)	(185,195)	147	5,082,987	3
6.8194	18,321	(1,215)	(186,410)	148	5,084,180	3
6.8194	18,321	(1,215)	(187,625)	149	5,085,372	3
6.8194	18,321	(1,216)	(188,841)	150	5,086,563	3
6.8194	18,321	(1,216)	(190,057)	151	5,087,754	3
6.8194	18,321	(1,217)	(191,274)	152	5,088,945	3
6.8194	18,321	(1,217)	(192,491)	153	5,090,136	3
6.8194	18,321	(1,217)	(193,708)	154	5,091,326	3
6.8194	18,321	(1,218)	(194,926)	154	5,092,516	3
6.8194	18,321	(1,218)	(196,144)	155	5,093,706	3
6.8194	18,321	(1,219)	(197,363)	156	5,094,895	3
6.8194	18,321	(1,219)	(198,582)	157	5,096,084	3
6.8194	18,321	(1,219)	(199,801)	158	5,097,273	3
6.8194	18,321	(1,220)	(201,021)	159	5,098,461	3
6.8194	18,321	(1,220)	(202,241)	160	5,099,649	3
6.8194	18,321	(1,221)	(203,461)	161	5,100,837	3
6.8194	18,321	(1,221)	(204,682)	162	5,102,024	3
6.8194	18,321	(1,221)	(205,904)	163	5,103,211	3
6.8194	18,321	(1,222)	(207,125)	164	5,104,398	3
6.8194	18,321	(1,222)	(208,347)	165	5,105,584	3
6.8194	18,321	(1,223)	(209,570)	166	5,106,770	3
6.8194	18,321	(1,223)	(210,793)	167	5,107,956	3
6.8194	18,321	(1,833)	(3,528,815)	(4,747)	5,603,187	2
7.8209	21,101	849	(3,527,966)	(4,748)	5,601,781	-89
7.8209	21,101	849	(3,527,117)	(4,749)	5,600,374	-89
7.8209	21,101	850	(3,526,267)	(4,750)	5,598,965	-89
7.8209	21,101	850	(3,525,417)	(4,751)	5,597,555	-89
7.8209	21,101	851	(3,524,566)	(4,752)	5,596,143	-89
7.8209	21,101	851	(3,523,714)	(4,753)	5,594,730	-89
7.8209	21,101	852	(3,522,862)	(4,754)	5,593,316	-89
7.8209	21,101	853	(3,522,010)	(4,755)	5,591,900	-89
7.8209	21,101	853	(3,521,157)	(4,757)	5,590,483	-88
7.8209	21,101	854	(3,520,303)	(4,758)	5,589,065	-88
7.8209	21,101	854	(3,519,449)	(4,759)	5,587,645	-88
7.8209	21,101	855	(3,518,594)	(4,760)	5,586,224	-88
7.8209	21,101	855	(3,517,739)	(4,761)	5,584,801	-88
7.8209	21,101	856	(3,516,883)	(4,762)	5,583,377	-88
7.8209	21,101	856	(3,516,027)	(4,763)	5,581,952	-88
7.8209	21,101	857	(3,515,170)	(4,764)	5,580,525	-88
7.8209	21,101	857	(3,514,312)	(4,765)	5,579,097	-88
7.8209	21,101	858	(3,513,454)	(4,766)	5,577,668	-88
7.8209	21,101	859	(3,512,596)	(4,767)	5,576,237	-88
7.8209	21,101	859	(3,511,737)	(4,768)	5,574,805	-88
7.8209	21,101	860	(3,510,877)	(4,769)	5,573,371	-88
7.8209	21,101	860	(3,510,017)	(4,770)	5,571,936	-87
7.8209	21,101	861	(3,509,156)	(4,771)	5,570,500	-87
7.8209	21,101	861	(3,508,295)	(4,773)	5,569,062	-87
7.8209	21,101	862	(3,507,433)	(4,774)	5,567,623	-87
7.8209	21,101	862	(3,506,570)	(4,775)	5,566,182	-87

7.8209	21,101	863	(3,505,707)	(4,776)	5,564,740	-87
7.8209	21,101	864	(3,504,844)	(4,777)	5,563,297	-87
7.8209	21,101	864	(3,503,980)	(4,778)	5,561,852	-87
7.8209	21,101	865	(3,503,115)	(4,779)	5,560,406	-87
7.8209	21,101	865	(3,502,250)	(4,780)	5,558,958	-87
7.8209	21,101	866	(3,501,384)	(4,781)	5,557,510	-87
7.8209	21,101	866	(3,500,518)	(4,782)	5,556,059	-87
7.8209	21,101	867	(3,499,651)	(4,783)	5,554,608	-87
7.8209	21,101	867	(3,498,784)	(4,784)	5,553,154	-86
7.8209	21,101	868	(3,497,916)	(4,785)	5,551,700	-86
7.8209	21,101	868	(3,497,047)	(4,786)	5,550,244	-86
7.8209	21,101	869	(3,496,178)	(4,787)	5,548,787	-86
7.8209	21,101	870	(3,495,309)	(4,788)	5,547,328	-86
7.8209	21,101	870	(3,494,439)	(4,789)	5,545,868	-86
7.8209	21,101	871	(3,493,568)	(4,790)	5,544,406	-86
7.8209	21,101	871	(3,492,697)	(4,791)	5,542,944	-86
7.8209	21,101	872	(3,491,825)	(4,792)	5,541,479	-86
7.8209	21,101	872	(3,490,953)	(4,794)	5,540,014	-86
7.8209	21,101	873	(3,490,080)	(4,795)	5,538,547	-86
7.8209	21,101	873	(3,489,206)	(4,796)	5,537,078	-86
7.8209	21,101	874	(3,488,332)	(4,797)	5,535,608	-86
7.8209	21,101	875	(3,487,458)	(4,798)	5,534,137	-85
7.8209	21,101	875	(3,486,583)	(4,799)	5,532,664	-85
7.8209	21,101	876	(3,485,707)	(4,800)	5,531,190	-85
7.8209	21,101	876	(3,484,831)	(4,801)	5,529,714	-85
7.8209	21,101	877	(3,483,954)	(4,802)	5,528,237	-85
7.8209	21,101	877	(3,483,077)	(4,803)	5,526,759	-85
7.8209	21,101	878	(3,482,199)	(4,804)	5,525,279	-85
7.8209	21,101	878	(3,481,321)	(4,805)	5,523,798	-85
7.8209	21,101	879	(3,480,442)	(4,806)	5,522,316	-85
7.8209	21,101	880	(3,479,562)	(4,807)	5,520,832	-85
7.8209	21,101	880	(3,478,682)	(4,808)	5,519,346	-85
7.8209	21,101	881	(3,477,801)	(4,809)	5,517,859	-85
7.8209	21,101	881	(3,476,920)	(4,810)	5,516,371	-85
7.8209	21,101	882	(3,476,038)	(4,811)	5,514,881	-84
7.8209	21,101	882	(3,475,156)	(4,812)	5,513,390	-84
7.8209	21,101	883	(3,474,273)	(4,813)	5,511,898	-84
7.8209	21,101	883	(3,473,390)	(4,814)	5,510,404	-84
7.8209	21,101	884	(3,472,506)	(4,815)	5,508,909	-84
7.8209	21,101	885	(3,471,621)	(4,816)	5,507,412	-84
7.8209	21,101	885	(3,470,736)	(4,817)	5,505,914	-84
7.8209	21,101	886	(3,469,851)	(4,818)	5,504,414	-84
7.8209	21,101	886	(3,468,965)	(4,819)	5,502,913	-84
7.8209	21,101	887	(3,468,078)	(4,820)	5,501,411	-84
7.8209	21,101	887	(3,467,191)	(4,821)	5,499,907	-84
7.8209	21,101	888	(3,466,303)	(4,822)	5,498,402	-84
7.8209	21,101	888	(3,465,414)	(4,823)	5,496,895	-84
7.8209	21,101	889	(3,464,525)	(4,824)	5,495,387	-84
7.8209	21,101	890	(3,463,636)	(4,825)	5,493,877	-83
7.8209	21,101	890	(3,462,746)	(4,826)	5,492,366	-83
7.8209	21,101	891	(3,461,855)	(4,827)	5,490,854	-83
7.8209	21,101	891	(3,460,964)	(4,828)	5,489,340	-83
7.8209	21,101	892	(3,460,072)	(4,829)	5,487,825	-83
7.8209	21,101	892	(3,459,180)	(4,830)	5,486,308	-83
7.8209	21,101	893	(3,458,287)	(4,831)	5,484,790	-83
7.8209	21,101	893	(3,457,394)	(4,832)	5,483,270	-83

7.8209	21,101	894	(3,456,500)	(4,833)	5,481,750	-83
7.8209	21,101	895	(3,455,605)	(4,834)	5,480,227	-83
7.8209	21,101	895	(3,454,710)	(4,835)	5,478,703	-83
7.8209	21,101	896	(3,453,815)	(4,836)	5,477,178	-83
7.8209	21,101	896	(3,452,918)	(4,837)	5,475,651	-83
7.8209	21,101	897	(3,452,022)	(4,838)	5,474,123	-83
7.8209	21,101	897	(3,451,124)	(4,839)	5,472,594	-82
7.8209	21,101	898	(3,450,226)	(4,840)	5,471,063	-82
7.8209	21,101	898	(3,449,328)	(4,841)	5,469,530	-82
7.8209	21,101	899	(3,448,429)	(4,842)	5,467,996	-82
7.8209	21,101	900	(3,447,530)	(4,843)	5,466,461	-82
7.8209	21,101	900	(3,446,629)	(4,844)	5,464,924	-82
7.8209	21,101	901	(3,445,729)	(4,845)	5,463,386	-82
7.8209	21,101	901	(3,444,828)	(4,846)	5,461,846	-82
7.8209	21,101	902	(3,443,926)	(4,847)	5,460,305	-82
7.8209	21,101	902	(3,443,023)	(4,848)	5,458,763	-82
7.8209	21,101	903	(3,442,121)	(4,849)	5,457,219	-82
7.8209	21,101	903	(3,441,217)	(4,850)	5,455,673	-82
7.8209	21,101	904	(3,440,313)	(4,851)	5,454,126	-82
7.8209	21,101	905	(3,439,409)	(4,852)	5,452,578	-81
7.8209	21,101	905	(3,438,503)	(4,853)	5,451,028	-81
7.8209	21,101	906	(3,437,598)	(4,854)	5,449,477	-81
7.8209	21,101	906	(3,436,691)	(4,855)	5,447,924	-81
7.8209	21,101	907	(3,435,785)	(4,856)	5,446,370	-81
7.8209	21,101	907	(3,434,877)	(4,857)	5,444,815	-81
7.8209	21,101	908	(3,433,969)	(4,858)	5,443,258	-81
7.8209	21,101	908	(3,433,061)	(4,859)	5,441,699	-81
7.8209	21,101	909	(3,432,152)	(4,860)	5,440,139	-81
7.8209	21,101	910	(3,431,242)	(4,861)	5,438,578	-81
7.8209	21,101	910	(3,430,332)	(4,862)	5,437,015	-81
7.8209	21,101	911	(3,429,421)	(4,863)	5,435,451	-81
7.8209	21,101	911	(3,428,510)	(4,864)	5,433,885	-81
7.8209	21,101	912	(3,427,598)	(4,865)	5,432,318	-81
7.8209	21,101	912	(3,426,686)	(4,866)	5,430,749	-80
7.8209	21,101	913	(3,425,773)	(4,867)	5,429,179	-80
7.8209	21,101	914	(3,424,859)	(4,868)	5,427,607	-80
7.8209	21,101	914	(3,423,945)	(4,868)	5,426,034	-80
7.8209	21,101	915	(3,423,030)	(4,869)	5,424,460	-80
7.8209	21,101	915	(3,422,115)	(4,870)	5,422,884	-80
7.8209	21,101	916	(3,421,199)	(4,871)	5,421,307	-80
7.8209	21,101	916	(3,420,283)	(4,872)	5,419,728	-80
7.8209	21,101	917	(3,419,366)	(4,873)	5,418,147	-80
7.8209	21,101	917	(3,418,449)	(4,874)	5,416,566	-80
7.8209	21,101	918	(3,417,531)	(4,875)	5,414,982	-80
7.8209	21,101	919	(3,416,612)	(4,876)	5,413,398	-80
7.8209	21,101	919	(3,415,693)	(4,877)	5,411,812	-80
7.8209	21,101	920	(3,414,773)	(4,878)	5,410,224	-80
7.8209	21,101	920	(3,413,853)	(4,879)	5,408,635	-80
7.8209	21,101	921	(3,412,932)	(4,880)	5,407,044	-79
7.8209	21,101	921	(3,412,011)	(4,881)	5,405,452	-79
7.8209	21,101	922	(3,411,089)	(4,882)	5,403,859	-79
7.8209	21,101	923	(3,410,166)	(4,883)	5,402,264	-79
7.8209	21,101	923	(3,409,243)	(4,884)	5,400,667	-79
7.8209	21,101	924	(3,408,319)	(4,885)	5,399,069	-79
7.8209	21,101	924	(3,407,395)	(4,886)	5,397,470	-79
7.8209	21,101	925	(3,406,470)	(4,886)	5,395,869	-79

7.8209	21,101	925	(3,405,545)	(4,887)	5,394,267	-79
7.8209	21,101	926	(3,404,619)	(4,888)	5,392,663	-79
7.8209	21,101	926	(3,403,692)	(4,889)	5,391,057	-79
7.8209	21,101	927	(3,402,765)	(4,890)	5,389,451	-79
7.8209	21,101	928	(3,401,838)	(4,891)	5,387,842	-79
7.8209	21,101	928	(3,400,910)	(4,892)	5,386,233	-79
7.8209	21,101	929	(3,399,981)	(4,893)	5,384,621	-78
7.8209	21,101	929	(3,399,052)	(4,894)	5,383,009	-78
7.8209	21,101	930	(3,398,122)	(4,895)	5,381,394	-78
7.8209	21,101	930	(3,397,191)	(4,896)	5,379,779	-78
7.8209	21,101	931	(3,396,260)	(4,897)	5,378,162	-78
7.8209	21,101	932	(3,395,329)	(4,898)	5,376,543	-78
7.8209	21,101	932	(3,394,397)	(4,899)	5,374,923	-78
7.8209	21,101	933	(3,393,464)	(4,900)	5,373,301	-78
7.8209	21,101	933	(3,392,531)	(4,900)	5,371,678	-78
7.8209	21,101	934	(3,391,597)	(4,901)	5,370,054	-78
7.8209	21,101	934	(3,390,662)	(4,902)	5,368,428	-78
7.8209	21,101	935	(3,389,727)	(4,903)	5,366,800	-78
7.8209	21,101	936	(3,388,792)	(4,904)	5,365,171	-78
7.8209	21,101	936	(3,387,856)	(4,905)	5,363,541	-78
7.8209	21,101	937	(3,386,919)	(4,906)	5,361,909	-77
7.8209	21,101	937	(3,385,982)	(4,907)	5,360,275	-77
7.8209	21,101	938	(3,385,044)	(4,908)	5,358,640	-77
7.8209	21,101	938	(3,384,106)	(4,909)	5,357,004	-77
7.8209	21,101	939	(3,383,167)	(4,910)	5,355,366	-77
7.8209	21,101	940	(3,382,227)	(4,910)	5,353,726	-77
7.8209	21,101	940	(3,381,287)	(4,911)	5,352,085	-77
7.8209	21,101	941	(3,380,346)	(4,912)	5,350,443	-77
7.8209	21,101	941	(3,379,405)	(4,913)	5,348,799	-77
7.8209	21,101	942	(3,378,463)	(4,914)	5,347,153	-77
7.8209	21,101	942	(3,377,521)	(4,915)	5,345,506	-77
7.8209	21,101	943	(3,376,578)	(4,916)	5,343,858	-77
7.8209	21,101	943	(3,375,635)	(4,917)	5,342,208	-77
7.8209	21,101	944	(3,374,691)	(4,918)	5,340,557	-77
7.8209	21,101	945	(3,373,746)	(4,919)	5,338,904	-77
7.8209	21,101	945	(3,372,801)	(4,920)	5,337,249	-76
7.8209	21,101	946	(3,371,855)	(4,920)	5,335,593	-76
7.8209	21,101	946	(3,370,909)	(4,921)	5,333,936	-76
7.8209	21,101	947	(3,369,962)	(4,922)	5,332,277	-76
7.8209	21,101	947	(3,369,014)	(4,923)	5,330,616	-76
7.8209	21,101	948	(3,368,066)	(4,924)	5,328,954	-76
7.8209	21,101	949	(3,367,118)	(4,925)	5,327,291	-76
7.8209	21,101	949	(3,366,168)	(4,926)	5,325,626	-76
7.8209	21,101	950	(3,365,219)	(4,927)	5,323,959	-76
7.8209	21,101	950	(3,364,268)	(4,928)	5,322,291	-76
7.8209	21,101	1,194	(7,245,649)	(9,771)	5,711,709	-60
8.6212	23,322	2,269	(7,243,379)	(9,774)	5,710,772	-75
8.6212	23,322	2,271	(7,241,109)	(9,777)	5,709,833	-75
8.6212	23,322	2,272	(7,238,837)	(9,780)	5,708,892	-75
8.6212	23,322	2,273	(7,236,563)	(9,784)	5,707,951	-75
8.6212	23,322	2,275	(7,234,289)	(9,787)	5,707,008	-75
8.6212	23,322	2,276	(7,232,013)	(9,790)	5,706,064	-75
8.6212	23,322	2,277	(7,229,736)	(9,793)	5,705,118	-75
8.6212	23,322	2,279	(7,227,457)	(9,796)	5,704,171	-75
8.6212	23,322	2,280	(7,225,177)	(9,799)	5,703,223	-75
8.6212	23,322	2,281	(7,222,895)	(9,802)	5,702,273	-75

8.6212	23,322	2,283	(7,220,613)	(9,805)	5,701,322	-75
8.6212	23,322	2,284	(7,218,329)	(9,808)	5,700,370	-75
8.6212	23,322	2,285	(7,216,043)	(9,812)	5,699,416	-75
8.6212	23,322	2,287	(7,213,756)	(9,815)	5,698,461	-75
8.6212	23,322	2,288	(7,211,468)	(9,818)	5,697,505	-74
8.6212	23,322	2,289	(7,209,179)	(9,821)	5,696,547	-74
8.6212	23,322	2,291	(7,206,888)	(9,824)	5,695,588	-74
8.6212	23,322	2,292	(7,204,596)	(9,827)	5,694,627	-74
8.6212	23,322	2,293	(7,202,302)	(9,830)	5,693,665	-74
8.6212	23,322	2,295	(7,200,008)	(9,833)	5,692,702	-74
8.6212	23,322	2,296	(7,197,711)	(9,836)	5,691,738	-74
8.6212	23,322	2,298	(7,195,414)	(9,840)	5,690,772	-74
8.6212	23,322	2,299	(7,193,115)	(9,843)	5,689,805	-74
8.6212	23,322	2,300	(7,190,815)	(9,846)	5,688,836	-74
8.6212	23,322	2,302	(7,188,513)	(9,849)	5,687,866	-74
8.6212	23,322	2,303	(7,186,210)	(9,852)	5,686,895	-74
8.6212	23,322	2,304	(7,183,906)	(9,855)	5,685,922	-74
8.6212	23,322	2,306	(7,181,600)	(9,858)	5,684,948	-74
8.6212	23,322	2,307	(7,179,293)	(9,861)	5,683,973	-74
8.6212	23,322	2,308	(7,176,985)	(9,864)	5,682,996	-73
8.6212	23,322	2,310	(7,174,675)	(9,867)	5,682,018	-73
8.6212	23,322	2,311	(7,172,364)	(9,870)	5,681,039	-73
8.6212	23,322	2,312	(7,170,052)	(9,873)	5,680,058	-73
8.6212	23,322	2,314	(7,167,738)	(9,877)	5,679,076	-73
8.6212	23,322	2,315	(7,165,423)	(9,880)	5,678,092	-73
8.6212	23,322	2,316	(7,163,106)	(9,883)	5,677,107	-73
8.6212	23,322	2,318	(7,160,789)	(9,886)	5,676,121	-73
8.6212	23,322	2,319	(7,158,469)	(9,889)	5,675,133	-73
8.6212	23,322	2,321	(7,156,149)	(9,892)	5,674,144	-73
8.6212	23,322	2,322	(7,153,827)	(9,895)	5,673,154	-73
8.6212	23,322	2,323	(7,151,504)	(9,898)	5,672,162	-73
8.6212	23,322	2,325	(7,149,179)	(9,901)	5,671,169	-73
8.6212	23,322	2,326	(7,146,853)	(9,904)	5,670,175	-73
8.6212	23,322	2,327	(7,144,526)	(9,907)	5,669,179	-73
8.6212	23,322	2,329	(7,142,197)	(9,910)	5,668,182	-72
8.6212	23,322	2,330	(7,139,867)	(9,913)	5,667,183	-72
8.6212	23,322	2,331	(7,137,536)	(9,916)	5,666,183	-72
8.6212	23,322	2,333	(7,135,203)	(9,919)	5,665,182	-72
8.6212	23,322	2,334	(7,132,869)	(9,923)	5,664,179	-72
8.6212	23,322	2,335	(7,130,533)	(9,926)	5,663,175	-72
8.6212	23,322	2,337	(7,128,197)	(9,929)	5,662,170	-72
8.6212	23,322	2,338	(7,125,858)	(9,932)	5,661,163	-72
8.6212	23,322	2,340	(7,123,519)	(9,935)	5,660,155	-72
8.6212	23,322	2,341	(7,121,178)	(9,938)	5,659,145	-72
8.6212	23,322	2,342	(7,118,836)	(9,941)	5,658,134	-72
8.6212	23,322	2,344	(7,116,492)	(9,944)	5,657,122	-72
8.6212	23,322	2,345	(7,114,147)	(9,947)	5,656,108	-72
8.6212	23,322	2,346	(7,111,801)	(9,950)	5,655,093	-72
8.6212	23,322	2,348	(7,109,453)	(9,953)	5,654,076	-72
8.6212	23,322	2,349	(7,107,104)	(9,956)	5,653,058	-71
8.6212	23,322	2,350	(7,104,753)	(9,959)	5,652,039	-71
8.6212	23,322	2,352	(7,102,401)	(9,962)	5,651,018	-71
8.6212	23,322	2,353	(7,100,048)	(9,965)	5,649,996	-71
8.6212	23,322	2,355	(7,097,694)	(9,968)	5,648,973	-71
8.6212	23,322	2,356	(7,095,338)	(9,971)	5,647,948	-71
8.6212	23,322	2,357	(7,092,980)	(9,974)	5,646,922	-71

8.6212	23,322	2,359	(7,090,622)	(9,977)	5,645,894	-71
8.6212	23,322	2,360	(7,088,262)	(9,980)	5,644,865	-71
8.6212	23,322	2,361	(7,085,900)	(9,983)	5,643,835	-71
8.6212	23,322	2,363	(7,083,538)	(9,986)	5,642,803	-71
8.6212	23,322	2,364	(7,081,173)	(9,989)	5,641,770	-71
8.6212	23,322	2,366	(7,078,808)	(9,992)	5,640,736	-71
8.6212	23,322	2,367	(7,076,441)	(9,995)	5,639,700	-71
8.6212	23,322	2,368	(7,074,073)	(9,998)	5,638,662	-71
8.6212	23,322	2,370	(7,071,703)	(10,001)	5,637,624	-71
8.6212	23,322	2,371	(7,069,332)	(10,004)	5,636,583	-70
8.6212	23,322	2,372	(7,066,960)	(10,007)	5,635,542	-70
8.6212	23,322	2,374	(7,064,586)	(10,010)	5,634,499	-70
8.6212	23,322	2,375	(7,062,211)	(10,013)	5,633,455	-70
8.6212	23,322	2,376	(7,059,835)	(10,016)	5,632,409	-70
8.6212	23,322	2,378	(7,057,457)	(10,019)	5,631,362	-70
8.6212	23,322	2,379	(7,055,077)	(10,022)	5,630,313	-70
8.6212	23,322	2,381	(7,052,697)	(10,025)	5,629,263	-70
8.6212	23,322	2,382	(7,050,315)	(10,028)	5,628,212	-70
8.6212	23,322	2,383	(7,047,932)	(10,031)	5,627,159	-70
8.6212	23,322	2,385	(7,045,547)	(10,034)	5,626,105	-70
8.6212	23,322	2,386	(7,043,161)	(10,037)	5,625,050	-70
8.6212	23,322	2,387	(7,040,773)	(10,040)	5,623,993	-70
8.6212	23,322	2,389	(7,038,384)	(10,043)	5,622,934	-70
8.6212	23,322	2,390	(7,035,994)	(10,046)	5,621,875	-70
8.6212	23,322	2,392	(7,033,603)	(10,049)	5,620,813	-69
8.6212	23,322	2,393	(7,031,210)	(10,052)	5,619,751	-69
8.6212	23,322	2,394	(7,028,815)	(10,055)	5,618,687	-69
8.6212	23,322	2,396	(7,026,420)	(10,058)	5,617,621	-69
8.6212	23,322	2,397	(7,024,022)	(10,061)	5,616,555	-69
8.6212	23,322	2,398	(7,021,624)	(10,064)	5,615,486	-69
8.6212	23,322	2,400	(7,019,224)	(10,067)	5,614,417	-69
8.6212	23,322	2,401	(7,016,823)	(10,070)	5,613,346	-69
8.6212	23,322	2,403	(7,014,420)	(10,073)	5,612,273	-69
8.6212	23,322	2,404	(7,012,016)	(10,076)	5,611,199	-69
8.6212	23,322	2,405	(7,009,611)	(10,079)	5,610,124	-69
8.6212	23,322	2,407	(7,007,204)	(10,082)	5,609,047	-69
8.6212	23,322	2,408	(7,004,796)	(10,085)	5,607,969	-69
8.6212	23,322	2,410	(7,002,386)	(10,088)	5,606,890	-69
8.6212	23,322	2,411	(6,999,975)	(10,091)	5,605,809	-69
8.6212	23,322	2,412	(6,997,563)	(10,094)	5,604,726	-69
8.6212	23,322	2,414	(6,995,150)	(10,097)	5,603,642	-68
8.6212	23,322	2,415	(6,992,734)	(10,100)	5,602,557	-68
8.6212	23,322	2,416	(6,990,318)	(10,103)	5,601,471	-68
8.6212	23,322	2,418	(6,987,900)	(10,106)	5,600,383	-68
8.6212	23,322	2,419	(6,985,481)	(10,109)	5,599,293	-68
8.6212	23,322	2,421	(6,983,060)	(10,111)	5,598,202	-68
8.6212	23,322	2,422	(6,980,638)	(10,114)	5,597,110	-68
8.6212	23,322	2,423	(6,978,215)	(10,117)	5,596,016	-68
8.6212	23,322	2,425	(6,975,790)	(10,120)	5,594,921	-68
8.6212	23,322	2,426	(6,973,364)	(10,123)	5,593,824	-68
8.6212	23,322	2,428	(6,970,936)	(10,126)	5,592,726	-68
8.6212	23,322	2,429	(6,968,508)	(10,129)	5,591,627	-68
8.6212	23,322	2,430	(6,966,077)	(10,132)	5,590,526	-68
8.6212	23,322	2,432	(6,963,646)	(10,135)	5,589,423	-68
8.6212	23,322	2,433	(6,961,212)	(10,138)	5,588,319	-68
8.6212	23,322	2,434	(6,958,778)	(10,141)	5,587,214	-68

8.6212	23,322	2,436	(6,956,342)	(10,144)	5,586,108	-67
8.6212	23,322	2,437	(6,953,905)	(10,147)	5,584,999	-67
8.6212	23,322	2,439	(6,951,466)	(10,150)	5,583,890	-67
8.6212	23,322	2,440	(6,949,026)	(10,153)	5,582,779	-67
8.6212	23,322	2,441	(6,946,585)	(10,155)	5,581,667	-67
8.6212	23,322	2,443	(6,944,142)	(10,158)	5,580,553	-67
8.6212	23,322	2,444	(6,941,698)	(10,161)	5,579,437	-67
8.6212	23,322	2,446	(6,939,252)	(10,164)	5,578,321	-67
8.6212	23,322	2,447	(6,936,805)	(10,167)	5,577,203	-67
8.6212	23,322	2,448	(6,934,357)	(10,170)	5,576,083	-67
8.6212	23,322	2,450	(6,931,907)	(10,173)	5,574,962	-67
8.6212	23,322	2,451	(6,929,456)	(10,176)	5,573,839	-67
8.6212	23,322	2,453	(6,927,003)	(10,179)	5,572,715	-67
8.6212	23,322	2,454	(6,924,549)	(10,182)	5,571,590	-67
8.6212	23,322	2,455	(6,922,094)	(10,185)	5,570,463	-67
8.6212	23,322	2,457	(6,919,637)	(10,188)	5,569,335	-67
8.6212	23,322	2,458	(6,917,179)	(10,190)	5,568,205	-66
8.6212	23,322	2,460	(6,914,719)	(10,193)	5,567,074	-66
8.6212	23,322	2,461	(6,912,258)	(10,196)	5,565,942	-66
8.6212	23,322	2,462	(6,909,796)	(10,199)	5,564,807	-66
8.6212	23,322	2,464	(6,907,332)	(10,202)	5,563,672	-66
8.6212	23,322	2,465	(6,904,867)	(10,205)	5,562,535	-66
8.6212	23,322	2,467	(6,902,400)	(10,208)	5,561,397	-66
8.6212	23,322	2,468	(6,899,932)	(10,211)	5,560,257	-66
8.6212	23,322	2,469	(6,897,463)	(10,214)	5,559,115	-66
8.6212	23,322	2,471	(6,894,992)	(10,216)	5,557,973	-66
8.6212	23,322	2,472	(6,892,520)	(10,219)	5,556,828	-66
8.6212	23,322	2,474	(6,890,046)	(10,222)	5,555,683	-66
8.6212	23,322	2,475	(6,887,571)	(10,225)	5,554,536	-66
8.6212	23,322	2,476	(6,885,095)	(10,228)	5,553,387	-66
8.6212	23,322	2,478	(6,882,617)	(10,231)	5,552,237	-66
8.6212	23,322	2,479	(6,880,138)	(10,234)	5,551,085	-66
8.6212	23,322	2,481	(6,877,658)	(10,237)	5,549,932	-66
8.6212	23,322	2,482	(6,875,176)	(10,239)	5,548,778	-65
8.6212	23,322	2,483	(6,872,692)	(10,242)	5,547,622	-65
8.6212	23,322	2,485	(6,870,207)	(10,245)	5,546,465	-65
8.6212	23,322	2,486	(6,867,721)	(10,248)	5,545,306	-65
8.6212	23,322	2,488	(6,865,234)	(10,251)	5,544,146	-65
8.6212	23,322	2,489	(6,862,745)	(10,254)	5,542,984	-65
8.6212	23,322	2,490	(6,860,254)	(10,257)	5,541,821	-65
8.6212	23,322	2,492	(6,857,762)	(10,259)	5,540,656	-65
8.6212	23,322	2,493	(6,855,269)	(10,262)	5,539,490	-65
8.6212	23,322	2,495	(6,852,774)	(10,265)	5,538,322	-65
8.6212	23,322	2,496	(6,850,278)	(10,268)	5,537,153	-65
8.6212	23,322	2,497	(6,847,781)	(10,271)	5,535,982	-65
8.6212	23,322	2,499	(6,845,282)	(10,274)	5,534,810	-65
8.6212	23,322	2,500	(6,842,782)	(10,277)	5,533,637	-65
8.6212	23,322	2,502	(6,840,280)	(10,279)	5,532,462	-65
8.6212	23,322	2,503	(6,837,777)	(10,282)	5,531,285	-65
8.6212	23,322	2,504	(6,835,273)	(10,285)	5,530,107	-64
8.6212	23,322	2,506	(6,832,767)	(10,288)	5,528,928	-64
8.6212	23,322	2,507	(6,830,259)	(10,291)	5,527,747	-64
8.6212	23,322	2,509	(6,827,751)	(10,294)	5,526,565	-64
8.6212	23,322	2,510	(6,825,240)	(10,296)	5,525,381	-64
8.6212	23,322	2,512	(6,822,729)	(10,299)	5,524,196	-64
8.6212	23,322	2,513	(6,820,216)	(10,302)	5,523,009	-64

8.6212	23,322	2,514	(6,817,702)	(10,305)	5,521,821	-64
8.6212	23,322	2,516	(6,815,186)	(10,308)	5,520,631	-64
8.6212	23,322	2,517	(6,812,669)	(10,311)	5,519,440	-64
8.6212	23,322	1,668	(11,055,624)	(15,194)	5,843,938	-96
9.2838	25,161	3,299	(11,052,326)	(15,199)	5,843,283	-85
9.2838	25,161	3,301	(11,049,025)	(15,204)	5,842,626	-85
9.2838	25,161	3,303	(11,045,722)	(15,209)	5,841,967	-85
9.2838	25,161	3,305	(11,042,418)	(15,215)	5,841,308	-85
9.2838	25,161	3,307	(11,039,111)	(15,220)	5,840,647	-85
9.2838	25,161	3,309	(11,035,802)	(15,225)	5,839,985	-85
9.2838	25,161	3,311	(11,032,491)	(15,230)	5,839,321	-85
9.2838	25,161	3,313	(11,029,178)	(15,236)	5,838,656	-85
9.2838	25,161	3,315	(11,025,863)	(15,241)	5,837,990	-85
9.2838	25,161	3,317	(11,022,546)	(15,246)	5,837,322	-85
9.2838	25,161	3,319	(11,019,227)	(15,251)	5,836,654	-84
9.2838	25,161	3,321	(11,015,906)	(15,256)	5,835,983	-84
9.2838	25,161	3,323	(11,012,583)	(15,262)	5,835,312	-84
9.2838	25,161	3,325	(11,009,258)	(15,267)	5,834,639	-84
9.2838	25,161	3,327	(11,005,930)	(15,272)	5,833,964	-84
9.2838	25,161	3,329	(11,002,601)	(15,277)	5,833,289	-84
9.2838	25,161	3,331	(10,999,270)	(15,282)	5,832,612	-84
9.2838	25,161	3,333	(10,995,937)	(15,288)	5,831,934	-84
9.2838	25,161	3,335	(10,992,601)	(15,293)	5,831,254	-84
9.2838	25,161	3,337	(10,989,264)	(15,298)	5,830,573	-84
9.2838	25,161	3,339	(10,985,924)	(15,303)	5,829,891	-84
9.2838	25,161	3,342	(10,982,583)	(15,308)	5,829,207	-84
9.2838	25,161	3,344	(10,979,239)	(15,314)	5,828,522	-84
9.2838	25,161	3,346	(10,975,894)	(15,319)	5,827,836	-83
9.2838	25,161	3,348	(10,972,546)	(15,324)	5,827,148	-83
9.2838	25,161	3,350	(10,969,196)	(15,329)	5,826,459	-83
9.2838	25,161	3,352	(10,965,844)	(15,334)	5,825,768	-83
9.2838	25,161	3,354	(10,962,491)	(15,340)	5,825,077	-83
9.2838	25,161	3,356	(10,959,135)	(15,345)	5,824,383	-83
9.2838	25,161	3,358	(10,955,777)	(15,350)	5,823,689	-83
9.2838	25,161	3,360	(10,952,417)	(15,355)	5,822,993	-83
9.2838	25,161	3,362	(10,949,055)	(15,360)	5,822,296	-83
9.2838	25,161	3,364	(10,945,691)	(15,365)	5,821,597	-83
9.2838	25,161	3,366	(10,942,325)	(15,371)	5,820,898	-83
9.2838	25,161	3,368	(10,938,956)	(15,376)	5,820,196	-83
9.2838	25,161	3,370	(10,935,586)	(15,381)	5,819,494	-83
9.2838	25,161	3,372	(10,932,214)	(15,386)	5,818,790	-82
9.2838	25,161	3,374	(10,928,840)	(15,391)	5,818,084	-82
9.2838	25,161	3,376	(10,925,463)	(15,396)	5,817,378	-82
9.2838	25,161	3,378	(10,922,085)	(15,402)	5,816,670	-82
9.2838	25,161	3,381	(10,918,704)	(15,407)	5,815,960	-82
9.2838	25,161	3,383	(10,915,322)	(15,412)	5,815,249	-82
9.2838	25,161	3,385	(10,911,937)	(15,417)	5,814,537	-82
9.2838	25,161	3,387	(10,908,550)	(15,422)	5,813,824	-82
9.2838	25,161	3,389	(10,905,161)	(15,427)	5,813,109	-82
9.2838	25,161	3,391	(10,901,771)	(15,432)	5,812,393	-82
9.2838	25,161	3,393	(10,898,378)	(15,438)	5,811,675	-82
9.2838	25,161	3,395	(10,894,983)	(15,443)	5,810,956	-82
9.2838	25,161	3,397	(10,891,586)	(15,448)	5,810,236	-82
9.2838	25,161	3,399	(10,888,187)	(15,453)	5,809,514	-82
9.2838	25,161	3,401	(10,884,785)	(15,458)	5,808,791	-81
9.2838	25,161	3,403	(10,881,382)	(15,463)	5,808,067	-81

9.2838	25,161	3,405	(10,877,977)	(15,468)	5,807,341	-81
9.2838	25,161	3,407	(10,874,570)	(15,474)	5,806,614	-81
9.2838	25,161	3,409	(10,871,160)	(15,479)	5,805,885	-81
9.2838	25,161	3,412	(10,867,749)	(15,484)	5,805,155	-81
9.2838	25,161	3,414	(10,864,335)	(15,489)	5,804,424	-81
9.2838	25,161	3,416	(10,860,919)	(15,494)	5,803,691	-81
9.2838	25,161	3,418	(10,857,502)	(15,499)	5,802,957	-81
9.2838	25,161	3,420	(10,854,082)	(15,504)	5,802,222	-81
9.2838	25,161	3,422	(10,850,660)	(15,509)	5,801,485	-81
9.2838	25,161	3,424	(10,847,236)	(15,515)	5,800,746	-81
9.2838	25,161	3,426	(10,843,810)	(15,520)	5,800,007	-81
9.2838	25,161	3,428	(10,840,382)	(15,525)	5,799,266	-80
9.2838	25,161	3,430	(10,836,952)	(15,530)	5,798,524	-80
9.2838	25,161	3,432	(10,833,520)	(15,535)	5,797,780	-80
9.2838	25,161	3,434	(10,830,085)	(15,540)	5,797,035	-80
9.2838	25,161	3,436	(10,826,649)	(15,545)	5,796,288	-80
9.2838	25,161	3,438	(10,823,211)	(15,550)	5,795,540	-80
9.2838	25,161	3,441	(10,819,770)	(15,555)	5,794,791	-80
9.2838	25,161	3,443	(10,816,327)	(15,560)	5,794,040	-80
9.2838	25,161	3,445	(10,812,883)	(15,566)	5,793,288	-80
9.2838	25,161	3,447	(10,809,436)	(15,571)	5,792,535	-80
9.2838	25,161	3,449	(10,805,987)	(15,576)	5,791,780	-80
9.2838	25,161	3,451	(10,802,536)	(15,581)	5,791,024	-80
9.2838	25,161	3,453	(10,799,083)	(15,586)	5,790,266	-80
9.2838	25,161	3,455	(10,795,628)	(15,591)	5,789,507	-79
9.2838	25,161	3,457	(10,792,171)	(15,596)	5,788,747	-79
9.2838	25,161	3,459	(10,788,711)	(15,601)	5,787,985	-79
9.2838	25,161	3,461	(10,785,250)	(15,606)	5,787,222	-79
9.2838	25,161	3,463	(10,781,787)	(15,611)	5,786,457	-79
9.2838	25,161	3,466	(10,778,321)	(15,616)	5,785,691	-79
9.2838	25,161	3,468	(10,774,853)	(15,621)	5,784,924	-79
9.2838	25,161	3,470	(10,771,384)	(15,627)	5,784,155	-79
9.2838	25,161	3,472	(10,767,912)	(15,632)	5,783,385	-79
9.2838	25,161	3,474	(10,764,438)	(15,637)	5,782,614	-79
9.2838	25,161	3,476	(10,760,962)	(15,642)	5,781,841	-79
9.2838	25,161	3,478	(10,757,484)	(15,647)	5,781,066	-79
9.2838	25,161	3,480	(10,754,004)	(15,652)	5,780,290	-79
9.2838	25,161	3,482	(10,750,522)	(15,657)	5,779,513	-79
9.2838	25,161	3,484	(10,747,037)	(15,662)	5,778,735	-78
9.2838	25,161	3,486	(10,743,551)	(15,667)	5,777,955	-78
9.2838	25,161	3,489	(10,740,062)	(15,672)	5,777,173	-78
9.2838	25,161	3,491	(10,736,572)	(15,677)	5,776,391	-78
9.2838	25,161	3,493	(10,733,079)	(15,682)	5,775,606	-78
9.2838	25,161	3,495	(10,729,584)	(15,687)	5,774,821	-78
9.2838	25,161	3,497	(10,726,087)	(15,692)	5,774,034	-78
9.2838	25,161	3,499	(10,722,588)	(15,697)	5,773,245	-78
9.2838	25,161	3,501	(10,719,087)	(15,702)	5,772,456	-78
9.2838	25,161	3,503	(10,715,584)	(15,707)	5,771,664	-78
9.2838	25,161	3,505	(10,712,078)	(15,712)	5,770,872	-78
9.2838	25,161	3,507	(10,708,571)	(15,717)	5,770,078	-78
9.2838	25,161	3,510	(10,705,061)	(15,722)	5,769,282	-78
9.2838	25,161	3,512	(10,701,550)	(15,727)	5,768,485	-78
9.2838	25,161	3,514	(10,698,036)	(15,732)	5,767,687	-77
9.2838	25,161	3,516	(10,694,520)	(15,737)	5,766,887	-77
9.2838	25,161	3,518	(10,691,002)	(15,743)	5,766,086	-77
9.2838	25,161	3,520	(10,687,482)	(15,748)	5,765,283	-77

9.2838	25,161	3,522	(10,683,960)	(15,753)	5,764,479	-77
9.2838	25,161	3,524	(10,680,436)	(15,758)	5,763,674	-77
9.2838	25,161	3,526	(10,676,909)	(15,763)	5,762,867	-77
9.2838	25,161	3,528	(10,673,381)	(15,768)	5,762,059	-77
9.2838	25,161	3,531	(10,669,850)	(15,773)	5,761,249	-77
9.2838	25,161	3,533	(10,666,318)	(15,778)	5,760,438	-77
9.2838	25,161	3,535	(10,662,783)	(15,783)	5,759,626	-77
9.2838	25,161	3,537	(10,659,246)	(15,788)	5,758,812	-77
9.2838	25,161	3,539	(10,655,707)	(15,793)	5,757,996	-77
9.2838	25,161	3,541	(10,652,166)	(15,798)	5,757,180	-77
9.2838	25,161	3,543	(10,648,623)	(15,803)	5,756,361	-76
9.2838	25,161	3,545	(10,645,077)	(15,808)	5,755,542	-76
9.2838	25,161	3,547	(10,641,530)	(15,813)	5,754,721	-76
9.2838	25,161	3,550	(10,637,980)	(15,818)	5,753,898	-76
9.2838	25,161	3,552	(10,634,429)	(15,823)	5,753,074	-76
9.2838	25,161	3,554	(10,630,875)	(15,828)	5,752,249	-76
9.2838	25,161	3,556	(10,627,319)	(15,833)	5,751,422	-76
9.2838	25,161	3,558	(10,623,761)	(15,838)	5,750,594	-76
9.2838	25,161	3,560	(10,620,201)	(15,842)	5,749,764	-76
9.2838	25,161	3,562	(10,616,638)	(15,847)	5,748,933	-76
9.2838	25,161	3,564	(10,613,074)	(15,852)	5,748,101	-76
9.2838	25,161	3,567	(10,609,507)	(15,857)	5,747,267	-76
9.2838	25,161	3,569	(10,605,939)	(15,862)	5,746,431	-76
9.2838	25,161	3,571	(10,602,368)	(15,867)	5,745,594	-76
9.2838	25,161	3,573	(10,598,795)	(15,872)	5,744,756	-75
9.2838	25,161	3,575	(10,595,220)	(15,877)	5,743,916	-75
9.2838	25,161	3,577	(10,591,643)	(15,882)	5,743,075	-75
9.2838	25,161	3,579	(10,588,064)	(15,887)	5,742,232	-75
9.2838	25,161	3,581	(10,584,482)	(15,892)	5,741,388	-75
9.2838	25,161	3,583	(10,580,899)	(15,897)	5,740,543	-75
9.2838	25,161	3,586	(10,577,313)	(15,902)	5,739,696	-75
9.2838	25,161	3,588	(10,573,726)	(15,907)	5,738,848	-75
9.2838	25,161	3,590	(10,570,136)	(15,912)	5,737,998	-75
9.2838	25,161	3,592	(10,566,544)	(15,917)	5,737,146	-75
9.2838	25,161	3,594	(10,562,950)	(15,922)	5,736,294	-75
9.2838	25,161	3,596	(10,559,353)	(15,927)	5,735,439	-75
9.2838	25,161	3,598	(10,555,755)	(15,932)	5,734,584	-75
9.2838	25,161	3,601	(10,552,154)	(15,937)	5,733,727	-75
9.2838	25,161	3,603	(10,548,552)	(15,942)	5,732,868	-74
9.2838	25,161	3,605	(10,544,947)	(15,947)	5,732,008	-74
9.2838	25,161	3,607	(10,541,340)	(15,951)	5,731,147	-74
9.2838	25,161	3,609	(10,537,731)	(15,956)	5,730,284	-74
9.2838	25,161	3,611	(10,534,120)	(15,961)	5,729,420	-74
9.2838	25,161	3,613	(10,530,506)	(15,966)	5,728,554	-74
9.2838	25,161	3,615	(10,526,891)	(15,971)	5,727,686	-74
9.2838	25,161	3,618	(10,523,273)	(15,976)	5,726,818	-74
9.2838	25,161	3,620	(10,519,654)	(15,981)	5,725,948	-74
9.2838	25,161	3,622	(10,516,032)	(15,986)	5,725,076	-74
9.2838	25,161	3,624	(10,512,408)	(15,991)	5,724,203	-74
9.2838	25,161	3,626	(10,508,782)	(15,996)	5,723,328	-74
9.2838	25,161	3,628	(10,505,153)	(16,001)	5,722,452	-74
9.2838	25,161	3,630	(10,501,523)	(16,006)	5,721,575	-74
9.2838	25,161	3,633	(10,497,890)	(16,010)	5,720,696	-74
9.2838	25,161	3,635	(10,494,256)	(16,015)	5,719,815	-73
9.2838	25,161	3,637	(10,490,619)	(16,020)	5,718,934	-73
9.2838	25,161	3,639	(10,486,980)	(16,025)	5,718,050	-73

9.2838	25,161	3,641	(10,483,339)	(16,030)	5,717,165	-73
9.2838	25,161	3,643	(10,479,695)	(16,035)	5,716,279	-73
9.2838	25,161	3,645	(10,476,050)	(16,040)	5,715,391	-73
9.2838	25,161	3,648	(10,472,402)	(16,045)	5,714,502	-73
9.2838	25,161	3,650	(10,468,753)	(16,050)	5,713,611	-73
9.2838	25,161	3,652	(10,465,101)	(16,054)	5,712,719	-73
9.2838	25,161	3,654	(10,461,447)	(16,059)	5,711,826	-73
9.2838	25,161	3,656	(10,457,791)	(16,064)	5,710,931	-73
9.2838	25,161	3,658	(10,454,132)	(16,069)	5,710,034	-73
9.2838	25,161	3,660	(10,450,472)	(16,074)	5,709,136	-73
9.2838	25,161	3,663	(10,446,809)	(16,079)	5,708,236	-73
9.2838	25,161	3,665	(10,443,144)	(16,084)	5,707,335	-73
9.2838	25,161	3,667	(10,439,478)	(16,089)	5,706,433	-72
9.2838	25,161	3,669	(10,435,808)	(16,093)	5,705,529	-72
9.2838	25,161	3,671	(10,432,137)	(16,098)	5,704,623	-72
9.2838	25,161	3,673	(10,428,464)	(16,103)	5,703,716	-72
9.2838	25,161	3,676	(10,424,788)	(16,108)	5,702,808	-72
9.2838	25,161	3,678	(10,421,111)	(16,113)	5,701,898	-72
9.2838	25,161	3,680	(10,417,431)	(16,118)	5,700,987	-72
9.2838	25,161	1,225	(15,045,830)	(2,934)	5,280,166	-216
9.5971	18,728	247	(15,045,583)	(2,937)	5,276,669	-1603
9.5971	18,728	248	(15,045,335)	(2,939)	5,273,169	-1598
9.5971	18,728	248	(15,045,087)	(2,942)	5,269,666	-1594
9.5971	18,728	249	(15,044,838)	(2,945)	5,266,161	-1589
9.5971	18,728	250	(15,044,589)	(2,947)	5,262,653	-1584
9.5971	18,728	250	(15,044,338)	(2,950)	5,259,142	-1580
9.5971	18,728	251	(15,044,087)	(2,952)	5,255,629	-1575
9.5971	18,728	252	(15,043,835)	(2,955)	5,252,113	-1571
9.5971	18,728	253	(15,043,583)	(2,957)	5,248,594	-1566
9.5971	18,728	253	(15,043,329)	(2,960)	5,245,073	-1562
9.5971	18,728	254	(15,043,075)	(2,962)	5,241,549	-1557
9.5971	18,728	255	(15,042,821)	(2,965)	5,238,022	-1553
9.5971	18,728	255	(15,042,565)	(2,968)	5,234,493	-1549
9.5971	18,728	256	(15,042,309)	(2,970)	5,230,961	-1544
9.5971	18,728	257	(15,042,052)	(2,973)	5,227,426	-1540
9.5971	18,728	258	(15,041,795)	(2,975)	5,223,889	-1535
9.5971	18,728	258	(15,041,536)	(2,978)	5,220,349	-1531
9.5971	18,728	259	(15,041,277)	(2,980)	5,216,807	-1527
9.5971	18,728	260	(15,041,018)	(2,983)	5,213,262	-1523
9.5971	18,728	260	(15,040,757)	(2,985)	5,209,714	-1518
9.5971	18,728	261	(15,040,496)	(2,988)	5,206,163	-1514
9.5971	18,728	262	(15,040,234)	(2,990)	5,202,610	-1510
9.5971	18,728	263	(15,039,972)	(2,993)	5,199,054	-1506
9.5971	18,728	263	(15,039,708)	(2,996)	5,195,495	-1502
9.5971	18,728	264	(15,039,444)	(2,998)	5,191,934	-1498
9.5971	18,728	265	(15,039,179)	(3,001)	5,188,370	-1493
9.5971	18,728	265	(15,038,914)	(3,003)	5,184,804	-1489
9.5971	18,728	266	(15,038,648)	(3,006)	5,181,234	-1485
9.5971	18,728	267	(15,038,381)	(3,008)	5,177,663	-1481
9.5971	18,728	268	(15,038,113)	(3,011)	5,174,088	-1477
9.5971	18,728	268	(15,037,845)	(3,013)	5,170,511	-1473
9.5971	18,728	269	(15,037,576)	(3,016)	5,166,931	-1469
9.5971	18,728	270	(15,037,306)	(3,018)	5,163,348	-1465
9.5971	18,728	271	(15,037,035)	(3,021)	5,159,763	-1461
9.5971	18,728	271	(15,036,764)	(3,023)	5,156,175	-1457
9.5971	18,728	272	(15,036,492)	(3,026)	5,152,584	-1454

9.5971	18,728	273	(15,036,219)	(3,028)	5,148,991	-1450
9.5971	18,728	273	(15,035,946)	(3,031)	5,145,394	-1446
9.5971	18,728	274	(15,035,672)	(3,033)	5,141,796	-1442
9.5971	18,728	275	(15,035,397)	(3,036)	5,138,194	-1438
9.5971	18,728	276	(15,035,121)	(3,038)	5,134,590	-1434
9.5971	18,728	276	(15,034,845)	(3,041)	5,130,983	-1431
9.5971	18,728	277	(15,034,568)	(3,043)	5,127,374	-1427
9.5971	18,728	278	(15,034,290)	(3,046)	5,123,761	-1423
9.5971	18,728	279	(15,034,011)	(3,048)	5,120,146	-1419
9.5971	18,728	279	(15,033,732)	(3,051)	5,116,529	-1416
9.5971	18,728	280	(15,033,452)	(3,054)	5,112,908	-1412
9.5971	18,728	281	(15,033,172)	(3,056)	5,109,285	-1408
9.5971	18,728	281	(15,032,890)	(3,059)	5,105,660	-1405
9.5971	18,728	282	(15,032,608)	(3,061)	5,102,031	-1401
9.5971	18,728	283	(15,032,325)	(3,064)	5,098,400	-1397
9.5971	18,728	284	(15,032,042)	(3,066)	5,094,766	-1394
9.5971	18,728	284	(15,031,757)	(3,069)	5,091,130	-1390
9.5971	18,728	285	(15,031,472)	(3,071)	5,087,490	-1387
9.5971	18,728	286	(15,031,186)	(3,073)	5,083,848	-1383
9.5971	18,728	286	(15,030,900)	(3,076)	5,080,204	-1380
9.5971	18,728	287	(15,030,613)	(3,078)	5,076,556	-1376
9.5971	18,728	288	(15,030,325)	(3,081)	5,072,906	-1373
9.5971	18,728	289	(15,030,036)	(3,083)	5,069,253	-1369
9.5971	18,728	289	(15,029,747)	(3,086)	5,065,598	-1366
9.5971	18,728	290	(15,029,457)	(3,088)	5,061,939	-1362
9.5971	18,728	291	(15,029,166)	(3,091)	5,058,278	-1359
9.5971	18,728	292	(15,028,874)	(3,093)	5,054,615	-1355
9.5971	18,728	292	(15,028,582)	(3,096)	5,050,948	-1352
9.5971	18,728	293	(15,028,289)	(3,098)	5,047,279	-1348
9.5971	18,728	294	(15,027,995)	(3,101)	5,043,607	-1345
9.5971	18,728	294	(15,027,700)	(3,103)	5,039,932	-1342
9.5971	18,728	295	(15,027,405)	(3,106)	5,036,255	-1338
9.5971	18,728	296	(15,027,109)	(3,108)	5,032,575	-1335
9.5971	18,728	297	(15,026,813)	(3,111)	5,028,892	-1332
9.5971	18,728	297	(15,026,515)	(3,113)	5,025,207	-1328
9.5971	18,728	298	(15,026,217)	(3,116)	5,021,518	-1325
9.5971	18,728	299	(15,025,918)	(3,118)	5,017,827	-1322
9.5971	18,728	300	(15,025,619)	(3,121)	5,014,133	-1319
9.5971	18,728	300	(15,025,318)	(3,123)	5,010,437	-1315
9.5971	18,728	301	(15,025,017)	(3,125)	5,006,738	-1312
9.5971	18,728	302	(15,024,715)	(3,128)	5,003,036	-1309
9.5971	18,728	303	(15,024,413)	(3,130)	4,999,331	-1306
9.5971	18,728	303	(15,024,110)	(3,133)	4,995,624	-1303
9.5971	18,728	304	(15,023,806)	(3,135)	4,991,913	-1300
9.5971	18,728	305	(15,023,501)	(3,138)	4,988,200	-1296
9.5971	18,728	305	(15,023,196)	(3,140)	4,984,485	-1293
9.5971	18,728	306	(15,022,889)	(3,143)	4,980,766	-1290
9.5971	18,728	307	(15,022,582)	(3,145)	4,977,045	-1287
9.5971	18,728	308	(15,022,275)	(3,148)	4,973,321	-1284
9.5971	18,728	308	(15,021,966)	(3,150)	4,969,595	-1281
9.5971	18,728	309	(15,021,657)	(3,152)	4,965,865	-1278
9.5971	18,728	310	(15,021,347)	(3,155)	4,962,133	-1275
9.5971	18,728	311	(15,021,037)	(3,157)	4,958,398	-1272
9.5971	18,728	311	(15,020,726)	(3,160)	4,954,660	-1269
9.5971	18,728	312	(15,020,414)	(3,162)	4,950,920	-1266
9.5971	18,728	313	(15,020,101)	(3,165)	4,947,177	-1263

9.5971	18,728	314	(15,019,787)	(3,167)	4,943,431	-1260
9.5971	18,728	314	(15,019,473)	(3,170)	4,939,682	-1257
9.5971	18,728	315	(15,019,158)	(3,172)	4,935,930	-1254
9.5971	18,728	316	(15,018,842)	(3,174)	4,932,176	-1251
9.5971	18,728	316	(15,018,526)	(3,177)	4,928,419	-1248
9.5971	18,728	317	(15,018,209)	(3,179)	4,924,659	-1245
9.5971	18,728	318	(15,017,891)	(3,182)	4,920,897	-1242
9.5971	18,728	319	(15,017,572)	(3,184)	4,917,131	-1239
9.5971	18,728	319	(15,017,253)	(3,187)	4,913,363	-1236
9.5971	18,728	320	(15,016,933)	(3,189)	4,909,592	-1234
9.5971	18,728	321	(15,016,612)	(3,191)	4,905,819	-1231
9.5971	18,728	322	(15,016,290)	(3,194)	4,902,042	-1228
9.5971	18,728	322	(15,015,968)	(3,196)	4,898,263	-1225
9.5971	18,728	323	(15,015,645)	(3,199)	4,894,481	-1222
9.5971	18,728	324	(15,015,321)	(3,201)	4,890,696	-1219
9.5971	18,728	325	(15,014,997)	(3,203)	4,886,909	-1217
9.5971	18,728	325	(15,014,671)	(3,206)	4,883,118	-1214
9.5971	18,728	326	(15,014,345)	(3,208)	4,879,325	-1211
9.5971	18,728	327	(15,014,019)	(3,211)	4,875,529	-1208
9.5971	18,728	327	(15,013,691)	(3,213)	4,871,730	-1206
9.5971	18,728	328	(15,013,363)	(3,216)	4,867,929	-1203
9.5971	18,728	329	(15,013,034)	(3,218)	4,864,125	-1200
9.5971	18,728	330	(15,012,704)	(3,220)	4,860,318	-1197
9.5971	18,728	330	(15,012,374)	(3,223)	4,856,508	-1195
9.5971	18,728	331	(15,012,043)	(3,225)	4,852,695	-1192
9.5971	18,728	332	(15,011,711)	(3,228)	4,848,880	-1189
9.5971	18,728	333	(15,011,378)	(3,230)	4,845,062	-1187
9.5971	18,728	333	(15,011,045)	(3,232)	4,841,240	-1184
9.5971	18,728	334	(15,010,711)	(3,235)	4,837,417	-1181
9.5971	18,728	335	(15,010,376)	(3,237)	4,833,590	-1179
9.5971	18,728	336	(15,010,040)	(3,239)	4,829,761	-1176
9.5971	18,728	336	(15,009,704)	(3,242)	4,825,928	-1173
9.5971	18,728	337	(15,009,367)	(3,244)	4,822,093	-1171
9.5971	18,728	338	(15,009,029)	(3,247)	4,818,255	-1168
9.5971	18,728	339	(15,008,691)	(3,249)	4,814,415	-1166
9.5971	18,728	339	(15,008,351)	(3,251)	4,810,571	-1163
9.5971	18,728	340	(15,008,011)	(3,254)	4,806,725	-1161
9.5971	18,728	341	(15,007,671)	(3,256)	4,802,876	-1158
9.5971	18,728	341	(15,007,329)	(3,259)	4,799,024	-1156
9.5971	18,728	342	(15,006,987)	(3,261)	4,795,169	-1153
9.5971	18,728	343	(15,006,644)	(3,263)	4,791,312	-1150
9.5971	18,728	344	(15,006,300)	(3,266)	4,787,452	-1148
9.5971	18,728	344	(15,005,956)	(3,268)	4,783,588	-1145
9.5971	18,728	345	(15,005,611)	(3,270)	4,779,723	-1143
9.5971	18,728	346	(15,005,265)	(3,273)	4,775,854	-1141
9.5971	18,728	347	(15,004,918)	(3,275)	4,771,982	-1138
9.5971	18,728	347	(15,004,571)	(3,278)	4,768,108	-1136
9.5971	18,728	348	(15,004,222)	(3,280)	4,764,230	-1133
9.5971	18,728	349	(15,003,873)	(3,282)	4,760,350	-1131
9.5971	18,728	350	(15,003,524)	(3,285)	4,756,467	-1128
9.5971	18,728	350	(15,003,173)	(3,287)	4,752,582	-1126
9.5971	18,728	351	(15,002,822)	(3,289)	4,748,693	-1123
9.5971	18,728	352	(15,002,470)	(3,292)	4,744,802	-1121
9.5971	18,728	353	(15,002,118)	(3,294)	4,740,908	-1119
9.5971	18,728	353	(15,001,764)	(3,296)	4,737,011	-1116
9.5971	18,728	354	(15,001,410)	(3,299)	4,733,111	-1114

9.5971	18,728	355	(15,001,055)	(3,301)	4,729,208	-1112
9.5971	18,728	356	(15,000,700)	(3,303)	4,725,302	-1109
9.5971	18,728	356	(15,000,343)	(3,306)	4,721,394	-1107
9.5971	18,728	357	(14,999,986)	(3,308)	4,717,483	-1105
9.5971	18,728	358	(14,999,629)	(3,310)	4,713,569	-1102
9.5971	18,728	359	(14,999,270)	(3,313)	4,709,652	-1100
9.5971	18,728	359	(14,998,911)	(3,315)	4,705,732	-1098
9.5971	18,728	360	(14,998,551)	(3,317)	4,701,809	-1095
9.5971	18,728	361	(14,998,190)	(3,320)	4,697,884	-1093
9.5971	18,728	362	(14,997,828)	(3,322)	4,693,956	-1091
9.5971	18,728	362	(14,997,466)	(3,324)	4,690,024	-1088
9.5971	18,728	363	(14,997,103)	(3,327)	4,686,090	-1086
9.5971	18,728	364	(14,996,739)	(3,329)	4,682,154	-1084
9.5971	18,728	365	(14,996,375)	(3,331)	4,678,214	-1082
9.5971	18,728	365	(14,996,009)	(3,334)	4,674,271	-1079
9.5971	18,728	366	(14,995,643)	(3,336)	4,670,326	-1077
9.5971	18,728	367	(14,995,277)	(3,338)	4,666,378	-1075
9.5971	18,728	368	(14,994,909)	(3,341)	4,662,427	-1073
9.5971	18,728	368	(14,994,541)	(3,343)	4,658,473	-1071
9.5971	18,728	369	(14,994,172)	(3,345)	4,654,516	-1068
9.5971	18,728	370	(14,993,802)	(3,348)	4,650,556	-1066
9.5971	18,728	371	(14,993,431)	(3,350)	4,646,593	-1064
9.5971	18,728	371	(14,993,060)	(3,352)	4,642,628	-1062
9.5971	18,728	372	(14,992,688)	(3,355)	4,638,660	-1060
9.5971	18,728	373	(14,992,315)	(3,357)	4,634,688	-1058
9.5971	18,728	373	(14,991,942)	(3,359)	4,630,714	-1055
9.5971	18,728	374	(14,991,568)	(3,362)	4,626,737	-1053
9.5971	18,728	375	(14,991,193)	(3,364)	4,622,758	-1051
9.5971	18,728	376	(14,990,817)	(3,366)	4,618,775	-1049
9.5971	18,728	376	(14,990,440)	(3,369)	4,614,789	-1047
9.5971	18,728	377	(14,990,063)	(3,371)	4,610,801	-1045
9.5971	18,728	378	(14,989,685)	(3,373)	4,606,810	-1043
9.5971	18,728	3,235	(18,376,298)	10,971	4,126,904	-122
9.9260	15,983	(3,057)	(18,379,355)	10,972	4,122,929	163
9.9260	15,983	(3,058)	(18,382,413)	10,972	4,118,951	163
9.9260	15,983	(3,059)	(18,385,471)	10,973	4,114,970	163
9.9260	15,983	(3,059)	(18,388,531)	10,974	4,110,987	163
9.9260	15,983	(3,060)	(18,391,591)	10,975	4,107,000	163
9.9260	15,983	(3,061)	(18,394,652)	10,975	4,103,011	163
9.9260	15,983	(3,062)	(18,397,714)	10,976	4,099,019	163
9.9260	15,983	(3,063)	(18,400,777)	10,977	4,095,025	163
9.9260	15,983	(3,064)	(18,403,841)	10,978	4,091,027	163
9.9260	15,983	(3,064)	(18,406,905)	10,978	4,087,027	163
9.9260	15,983	(3,065)	(18,409,970)	10,979	4,083,024	163
9.9260	15,983	(3,066)	(18,413,036)	10,980	4,079,018	163
9.9260	15,983	(3,067)	(18,416,103)	10,981	4,075,009	163
9.9260	15,983	(3,068)	(18,419,171)	10,981	4,070,998	163
9.9260	15,983	(3,068)	(18,422,239)	10,982	4,066,983	163
9.9260	15,983	(3,069)	(18,425,308)	10,983	4,062,966	163
9.9260	15,983	(3,070)	(18,428,379)	10,984	4,058,946	163
9.9260	15,983	(3,071)	(18,431,450)	10,984	4,054,923	163
9.9260	15,983	(3,072)	(18,434,521)	10,985	4,050,897	163
9.9260	15,983	(3,073)	(18,437,594)	10,986	4,046,869	163
9.9260	15,983	(3,073)	(18,440,667)	10,987	4,042,838	163
9.9260	15,983	(3,074)	(18,443,742)	10,987	4,038,804	163
9.9260	15,983	(3,075)	(18,446,817)	10,988	4,034,767	163

9.9260	15,983	(3,076)	(18,449,892)	10,989	4,030,727	163
9.9260	15,983	(3,077)	(18,452,969)	10,990	4,026,684	163
9.9260	15,983	(3,078)	(18,456,047)	10,991	4,022,639	163
9.9260	15,983	(3,078)	(18,459,125)	10,991	4,018,591	163
9.9260	15,983	(3,079)	(18,462,204)	10,992	4,014,539	163
9.9260	15,983	(3,080)	(18,465,284)	10,993	4,010,485	163
9.9260	15,983	(3,081)	(18,468,365)	10,994	4,006,429	163
9.9260	15,983	(3,082)	(18,471,447)	10,994	4,002,369	163
9.9260	15,983	(3,082)	(18,474,529)	10,995	3,998,307	163
9.9260	15,983	(3,083)	(18,477,612)	10,996	3,994,241	163
9.9260	15,983	(3,084)	(18,480,697)	10,997	3,990,173	163
9.9260	15,983	(3,085)	(18,483,782)	10,998	3,986,102	163
9.9260	15,983	(3,086)	(18,486,867)	10,998	3,982,029	163
9.9260	15,983	(3,087)	(18,489,954)	10,999	3,977,952	163
9.9260	15,983	(3,087)	(18,493,041)	11,000	3,973,872	163
9.9260	15,983	(3,088)	(18,496,130)	11,001	3,969,790	163
9.9260	15,983	(3,089)	(18,499,219)	11,001	3,965,705	163
9.9260	15,983	(3,090)	(18,502,309)	11,002	3,961,617	163
9.9260	15,983	(3,091)	(18,505,400)	11,003	3,957,526	163
9.9260	15,983	(3,092)	(18,508,491)	11,004	3,953,432	163
9.9260	15,983	(3,092)	(18,511,584)	11,005	3,949,336	163
9.9260	15,983	(3,093)	(18,514,677)	11,005	3,945,236	163
9.9260	15,983	(3,094)	(18,517,771)	11,006	3,941,134	163
9.9260	15,983	(3,095)	(18,520,866)	11,007	3,937,029	163
9.9260	15,983	(3,096)	(18,523,962)	11,008	3,932,921	163
9.9260	15,983	(3,097)	(18,527,058)	11,008	3,928,810	163
9.9260	15,983	(3,097)	(18,530,156)	11,009	3,924,696	163
9.9260	15,983	(3,098)	(18,533,254)	11,010	3,920,580	163
9.9260	15,983	(3,099)	(18,536,353)	11,011	3,916,460	163
9.9260	15,983	(3,100)	(18,539,453)	11,012	3,912,338	163
9.9260	15,983	(3,101)	(18,542,554)	11,012	3,908,213	163
9.9260	15,983	(3,102)	(18,545,655)	11,013	3,904,084	163
9.9260	15,983	(3,102)	(18,548,758)	11,014	3,899,954	163
9.9260	15,983	(3,103)	(18,551,861)	11,015	3,895,820	163
9.9260	15,983	(3,104)	(18,554,965)	11,016	3,891,683	163
9.9260	15,983	(3,105)	(18,558,070)	11,016	3,887,544	163
9.9260	15,983	(3,106)	(18,561,176)	11,017	3,883,401	162
9.9260	15,983	(3,107)	(18,564,282)	11,018	3,879,256	162
9.9260	15,983	(3,107)	(18,567,390)	11,019	3,875,108	162
9.9260	15,983	(3,108)	(18,570,498)	11,020	3,870,957	162
9.9260	15,983	(3,109)	(18,573,607)	11,020	3,866,803	162
9.9260	15,983	(3,110)	(18,576,717)	11,021	3,862,646	162
9.9260	15,983	(3,111)	(18,579,828)	11,022	3,858,486	162
9.9260	15,983	(3,112)	(18,582,940)	11,023	3,854,324	162
9.9260	15,983	(3,113)	(18,586,052)	11,024	3,850,158	162
9.9260	15,983	(3,113)	(18,589,166)	11,024	3,845,990	162
9.9260	15,983	(3,114)	(18,592,280)	11,025	3,841,818	162
9.9260	15,983	(3,115)	(18,595,395)	11,026	3,837,644	162
9.9260	15,983	(3,116)	(18,598,511)	11,027	3,833,467	162
9.9260	15,983	(3,117)	(18,601,628)	11,028	3,829,287	162
9.9260	15,983	(3,118)	(18,604,745)	11,028	3,825,105	162
9.9260	15,983	(3,118)	(18,607,864)	11,029	3,820,919	162
9.9260	15,983	(3,119)	(18,610,983)	11,030	3,816,730	162
9.9260	15,983	(3,120)	(18,614,103)	11,031	3,812,539	162
9.9260	15,983	(3,121)	(18,617,224)	11,032	3,808,344	162
9.9260	15,983	(3,122)	(18,620,346)	11,033	3,804,147	162

9.9260	15,983	(3,123)	(18,623,468)	11,033	3,799,947	162
9.9260	15,983	(3,123)	(18,626,592)	11,034	3,795,744	162
9.9260	15,983	(3,124)	(18,629,716)	11,035	3,791,538	162
9.9260	15,983	(3,125)	(18,632,841)	11,036	3,787,329	162
9.9260	15,983	(3,126)	(18,635,967)	11,037	3,783,117	162
9.9260	15,983	(3,127)	(18,639,094)	11,037	3,778,902	162
9.9260	15,983	(3,128)	(18,642,222)	11,038	3,774,685	162
9.9260	15,983	(3,129)	(18,645,351)	11,039	3,770,464	162
9.9260	15,983	(3,129)	(18,648,480)	11,040	3,766,241	162
9.9260	15,983	(3,130)	(18,651,610)	11,041	3,762,014	162
9.9260	15,983	(3,131)	(18,654,741)	11,042	3,757,785	162
9.9260	15,983	(3,132)	(18,657,873)	11,042	3,753,553	162
9.9260	15,983	(3,133)	(18,661,006)	11,043	3,749,318	162
9.9260	15,983	(3,134)	(18,664,140)	11,044	3,745,079	162
9.9260	15,983	(3,135)	(18,667,274)	11,045	3,740,838	162
9.9260	15,983	(3,135)	(18,670,410)	11,046	3,736,595	162
9.9260	15,983	(3,136)	(18,673,546)	11,047	3,732,348	162
9.9260	15,983	(3,137)	(18,676,683)	11,047	3,728,098	162
9.9260	15,983	(3,138)	(18,679,821)	11,048	3,723,845	162
9.9260	15,983	(3,139)	(18,682,960)	11,049	3,719,590	162
9.9260	15,983	(3,140)	(18,686,100)	11,050	3,715,331	162
9.9260	15,983	(3,141)	(18,689,240)	11,051	3,711,070	162
9.9260	15,983	(3,141)	(18,692,381)	11,052	3,706,805	162
9.9260	15,983	(3,142)	(18,695,524)	11,052	3,702,538	162
9.9260	15,983	(3,143)	(18,698,667)	11,053	3,698,268	162
9.9260	15,983	(3,144)	(18,701,811)	11,054	3,693,995	162
9.9260	15,983	(3,145)	(18,704,955)	11,055	3,689,718	162
9.9260	15,983	(3,146)	(18,708,101)	11,056	3,685,439	162
9.9260	15,983	(3,147)	(18,711,248)	11,057	3,681,157	162
9.9260	15,983	(3,147)	(18,714,395)	11,058	3,676,872	162
9.9260	15,983	(3,148)	(18,717,543)	11,058	3,672,584	162
9.9260	15,983	(3,149)	(18,720,692)	11,059	3,668,294	162
9.9260	15,983	(3,150)	(18,723,842)	11,060	3,664,000	162
9.9260	15,983	(3,151)	(18,726,993)	11,061	3,659,703	162
9.9260	15,983	(3,152)	(18,730,145)	11,062	3,655,403	162
9.9260	15,983	(3,153)	(18,733,297)	11,063	3,651,101	162
9.9260	15,983	(3,153)	(18,736,451)	11,063	3,646,795	162
9.9260	15,983	(3,154)	(18,739,605)	11,064	3,642,487	162
9.9260	15,983	(3,155)	(18,742,760)	11,065	3,638,175	162
9.9260	15,983	(3,156)	(18,745,916)	11,066	3,633,861	162
9.9260	15,983	(3,157)	(18,749,073)	11,067	3,629,543	161
9.9260	15,983	(3,158)	(18,752,231)	11,068	3,625,223	161
9.9260	15,983	(3,159)	(18,755,389)	11,069	3,620,900	161
9.9260	15,983	(3,159)	(18,758,549)	11,069	3,616,573	161
9.9260	15,983	(3,160)	(18,761,709)	11,070	3,612,244	161
9.9260	15,983	(3,161)	(18,764,870)	11,071	3,607,912	161
9.9260	15,983	(3,162)	(18,768,032)	11,072	3,603,577	161
9.9260	15,983	(3,163)	(18,771,195)	11,073	3,599,239	161
9.9260	15,983	(3,164)	(18,774,359)	11,074	3,594,897	161
9.9260	15,983	(3,165)	(18,777,523)	11,075	3,590,553	161
9.9260	15,983	(3,166)	(18,780,689)	11,075	3,586,206	161
9.9260	15,983	(3,166)	(18,783,855)	11,076	3,581,856	161
9.9260	15,983	(3,167)	(18,787,023)	11,077	3,577,503	161
9.9260	15,983	(3,168)	(18,790,191)	11,078	3,573,147	161
9.9260	15,983	(3,169)	(18,793,360)	11,079	3,568,788	161
9.9260	15,983	(3,170)	(18,796,529)	11,080	3,564,426	161

9.9260	15,983	(3,171)	(18,799,700)	11,081	3,560,062	161
9.9260	15,983	(3,172)	(18,802,872)	11,082	3,555,694	161
9.9260	15,983	(3,172)	(18,806,044)	11,082	3,551,323	161
9.9260	15,983	(3,173)	(18,809,218)	11,083	3,546,949	161
9.9260	15,983	(3,174)	(18,812,392)	11,084	3,542,572	161
9.9260	15,983	(3,175)	(18,815,567)	11,085	3,538,192	161
9.9260	15,983	(3,176)	(18,818,743)	11,086	3,533,809	161
9.9260	15,983	(3,177)	(18,821,920)	11,087	3,529,424	161
9.9260	15,983	(3,178)	(18,825,097)	11,088	3,525,035	161
9.9260	15,983	(3,179)	(18,828,276)	11,089	3,520,643	161
9.9260	15,983	(3,179)	(18,831,455)	11,089	3,516,248	161
9.9260	15,983	(3,180)	(18,834,636)	11,090	3,511,851	161
9.9260	15,983	(3,181)	(18,837,817)	11,091	3,507,450	161
9.9260	15,983	(3,182)	(18,840,999)	11,092	3,503,046	161
9.9260	15,983	(3,183)	(18,844,182)	11,093	3,498,639	161
9.9260	15,983	(3,184)	(18,847,366)	11,094	3,494,229	161
9.9260	15,983	(3,185)	(18,850,550)	11,095	3,489,817	161
9.9260	15,983	(3,186)	(18,853,736)	11,096	3,485,401	161
9.9260	15,983	(3,186)	(18,856,922)	11,097	3,480,982	161
9.9260	15,983	(3,187)	(18,860,110)	11,097	3,476,560	161
9.9260	15,983	(3,188)	(18,863,298)	11,098	3,472,136	161
9.9260	15,983	(3,189)	(18,866,487)	11,099	3,467,708	161
9.9260	15,983	(3,190)	(18,869,677)	11,100	3,463,277	161
9.9260	15,983	(3,191)	(18,872,868)	11,101	3,458,843	161
9.9260	15,983	(3,192)	(18,876,060)	11,102	3,454,406	161
9.9260	15,983	(3,193)	(18,879,252)	11,103	3,449,967	161
9.9260	15,983	(3,194)	(18,882,446)	11,104	3,445,524	161
9.9260	15,983	(3,194)	(18,885,640)	11,105	3,441,078	161
9.9260	15,983	(3,195)	(18,888,835)	11,105	3,436,629	161
9.9260	15,983	(3,196)	(18,892,032)	11,106	3,432,177	161
9.9260	15,983	(3,197)	(18,895,229)	11,107	3,427,722	161
9.9260	15,983	(3,198)	(18,898,427)	11,108	3,423,264	161
9.9260	15,983	(3,199)	(18,901,625)	11,109	3,418,803	161
9.9260	15,983	(3,200)	(18,904,825)	11,110	3,414,339	161
9.9260	15,983	(3,201)	(18,908,026)	11,111	3,409,872	161
9.9260	15,983	(3,201)	(18,911,227)	11,112	3,405,402	161
9.9260	15,983	(3,202)	(18,914,429)	11,113	3,400,929	161
9.9260	15,983	(3,203)	(18,917,633)	11,114	3,396,453	161
9.9260	15,983	(3,204)	(18,920,837)	11,115	3,391,974	161
9.9260	15,983	(3,205)	(18,924,042)	11,115	3,387,492	161
9.9260	15,983	(3,206)	(18,927,248)	11,116	3,383,006	161
9.9260	15,983	(3,207)	(18,930,454)	11,117	3,378,518	161
9.9260	15,983	(3,208)	(18,933,662)	11,118	3,374,027	160
9.9260	15,983	(3,209)	(18,936,871)	11,119	3,369,533	160
9.9260	15,983	(3,209)	(18,940,080)	11,120	3,365,035	160
9.9260	15,983	(3,210)	(18,943,290)	11,121	3,360,535	160
9.9260	15,983	(3,211)	(18,946,502)	11,122	3,356,031	160
9.9260	15,983	(3,212)	(18,949,714)	11,123	3,351,525	160
9.9260	15,983	(6,277)	(21,896,809)	25,206	2,706,274	82
10.3776	12,287	(7,513)	(21,904,322)	25,210	2,702,568	83
10.3776	12,287	(7,516)	(21,911,838)	25,215	2,698,858	83
10.3776	12,287	(7,519)	(21,919,358)	25,219	2,695,147	83
10.3776	12,287	(7,522)	(21,926,880)	25,223	2,691,432	83
10.3776	12,287	(7,525)	(21,934,405)	25,227	2,687,715	83
10.3776	12,287	(7,528)	(21,941,934)	25,231	2,683,996	83
10.3776	12,287	(7,531)	(21,949,465)	25,236	2,680,274	83

10.3776	12,287	(7,534)	(21,956,999)	25,240	2,676,550	83
10.3776	12,287	(7,537)	(21,964,537)	25,244	2,672,823	83
10.3776	12,287	(7,540)	(21,972,077)	25,248	2,669,094	83
10.3776	12,287	(7,543)	(21,979,620)	25,252	2,665,362	83
10.3776	12,287	(7,546)	(21,987,167)	25,257	2,661,627	83
10.3776	12,287	(7,549)	(21,994,716)	25,261	2,657,890	83
10.3776	12,287	(7,552)	(22,002,269)	25,265	2,654,151	83
10.3776	12,287	(7,556)	(22,009,824)	25,269	2,650,409	83
10.3776	12,287	(7,559)	(22,017,383)	25,274	2,646,664	83
10.3776	12,287	(7,562)	(22,024,944)	25,278	2,642,917	83
10.3776	12,287	(7,565)	(22,032,509)	25,282	2,639,168	83
10.3776	12,287	(7,568)	(22,040,077)	25,286	2,635,415	83
10.3776	12,287	(7,571)	(22,047,647)	25,290	2,631,661	83
10.3776	12,287	(7,574)	(22,055,221)	25,295	2,627,903	83
10.3776	12,287	(7,577)	(22,062,798)	25,299	2,624,144	83
10.3776	12,287	(7,580)	(22,070,377)	25,303	2,620,381	83
10.3776	12,287	(7,583)	(22,077,960)	25,307	2,616,617	83
10.3776	12,287	(7,586)	(22,085,546)	25,311	2,612,849	83
10.3776	12,287	(7,589)	(22,093,135)	25,316	2,609,079	83
10.3776	12,287	(7,592)	(22,100,727)	25,320	2,605,307	83
10.3776	12,287	(7,595)	(22,108,322)	25,324	2,601,532	83
10.3776	12,287	(7,598)	(22,115,920)	25,328	2,597,754	83
10.3776	12,287	(7,601)	(22,123,521)	25,333	2,593,974	83
10.3776	12,287	(7,604)	(22,131,125)	25,337	2,590,191	83
10.3776	12,287	(7,607)	(22,138,732)	25,341	2,586,406	83
10.3776	12,287	(7,610)	(22,146,342)	25,345	2,582,619	83
10.3776	12,287	(7,613)	(22,153,955)	25,349	2,578,828	83
10.3776	12,287	(7,616)	(22,161,572)	25,354	2,575,035	83
10.3776	12,287	(7,619)	(22,169,191)	25,358	2,571,240	83
10.3776	12,287	(7,622)	(22,176,814)	25,362	2,567,442	83
10.3776	12,287	(7,625)	(22,184,439)	25,366	2,563,642	83
10.3776	12,287	(7,629)	(22,192,067)	25,370	2,559,838	83
10.3776	12,287	(7,632)	(22,199,699)	25,375	2,556,033	83
10.3776	12,287	(7,635)	(22,207,334)	25,379	2,552,225	83
10.3776	12,287	(7,638)	(22,214,971)	25,383	2,548,414	83
10.3776	12,287	(7,641)	(22,222,612)	25,387	2,544,601	83
10.3776	12,287	(7,644)	(22,230,256)	25,392	2,540,785	83
10.3776	12,287	(7,647)	(22,237,903)	25,396	2,536,966	83
10.3776	12,287	(7,650)	(22,245,553)	25,400	2,533,145	83
10.3776	12,287	(7,653)	(22,253,206)	25,404	2,529,322	83
10.3776	12,287	(7,656)	(22,260,862)	25,408	2,525,496	83
10.3776	12,287	(7,659)	(22,268,521)	25,413	2,521,667	83
10.3776	12,287	(7,662)	(22,276,183)	25,417	2,517,836	83
10.3776	12,287	(7,665)	(22,283,848)	25,421	2,514,002	83
10.3776	12,287	(7,668)	(22,291,517)	25,425	2,510,165	83
10.3776	12,287	(7,671)	(22,299,188)	25,429	2,506,326	83
10.3776	12,287	(7,675)	(22,306,863)	25,434	2,502,485	83
10.3776	12,287	(7,678)	(22,314,540)	25,438	2,498,641	83
10.3776	12,287	(7,681)	(22,322,221)	25,442	2,494,794	83
10.3776	12,287	(7,684)	(22,329,905)	25,446	2,490,945	83
10.3776	12,287	(7,687)	(22,337,592)	25,451	2,487,093	83
10.3776	12,287	(7,690)	(22,345,281)	25,455	2,483,238	83
10.3776	12,287	(7,693)	(22,352,974)	25,459	2,479,381	83
10.3776	12,287	(7,696)	(22,360,670)	25,463	2,475,522	83
10.3776	12,287	(7,699)	(22,368,370)	25,467	2,471,659	83
10.3776	12,287	(7,702)	(22,376,072)	25,472	2,467,795	83

10.3776	12,287	(7,705)	(22,383,777)	25,476	2,463,927	83
10.3776	12,287	(7,708)	(22,391,486)	25,480	2,460,057	83
10.3776	12,287	(7,712)	(22,399,197)	25,484	2,456,185	83
10.3776	12,287	(7,715)	(22,406,912)	25,488	2,452,310	83
10.3776	12,287	(7,718)	(22,414,630)	25,493	2,448,432	83
10.3776	12,287	(7,721)	(22,422,350)	25,497	2,444,551	83
10.3776	12,287	(7,724)	(22,430,074)	25,501	2,440,669	83
10.3776	12,287	(7,727)	(22,437,801)	25,505	2,436,783	83
10.3776	12,287	(7,730)	(22,445,531)	25,509	2,432,895	83
10.3776	12,287	(7,733)	(22,453,265)	25,514	2,429,004	83
10.3776	12,287	(7,736)	(22,461,001)	25,518	2,425,111	83
10.3776	12,287	(7,739)	(22,468,740)	25,522	2,421,215	83
10.3776	12,287	(7,743)	(22,476,483)	25,526	2,417,316	83
10.3776	12,287	(7,746)	(22,484,228)	25,531	2,413,415	83
10.3776	12,287	(7,749)	(22,491,977)	25,535	2,409,512	82
10.3776	12,287	(7,752)	(22,499,729)	25,539	2,405,605	82
10.3776	12,287	(7,755)	(22,507,484)	25,543	2,401,696	82
10.3776	12,287	(7,758)	(22,515,242)	25,547	2,397,785	82
10.3776	12,287	(7,761)	(22,523,003)	25,552	2,393,871	82
10.3776	12,287	(7,764)	(22,530,767)	25,556	2,389,954	82
10.3776	12,287	(7,767)	(22,538,535)	25,560	2,386,034	82
10.3776	12,287	(7,771)	(22,546,305)	25,564	2,382,112	82
10.3776	12,287	(7,774)	(22,554,079)	25,568	2,378,188	82
10.3776	12,287	(7,777)	(22,561,856)	25,573	2,374,261	82
10.3776	12,287	(7,780)	(22,569,636)	25,577	2,370,331	82
10.3776	12,287	(7,783)	(22,577,419)	25,581	2,366,398	82
10.3776	12,287	(7,786)	(22,585,205)	25,585	2,362,463	82
10.3776	12,287	(7,789)	(22,592,994)	25,589	2,358,526	82
10.3776	12,287	(7,792)	(22,600,786)	25,594	2,354,585	82
10.3776	12,287	(7,795)	(22,608,582)	25,598	2,350,642	82
10.3776	12,287	(7,799)	(22,616,380)	25,602	2,346,697	82
10.3776	12,287	(7,802)	(22,624,182)	25,606	2,342,749	82
10.3776	12,287	(7,805)	(22,631,987)	25,610	2,338,798	82
10.3776	12,287	(7,808)	(22,639,795)	25,615	2,334,844	82
10.3776	12,287	(7,811)	(22,647,606)	25,619	2,330,888	82
10.3776	12,287	(7,814)	(22,655,420)	25,623	2,326,930	82
10.3776	12,287	(7,817)	(22,663,238)	25,627	2,322,968	82
10.3776	12,287	(7,821)	(22,671,058)	25,631	2,319,004	82
10.3776	12,287	(7,824)	(22,678,882)	25,636	2,315,038	82
10.3776	12,287	(7,827)	(22,686,709)	25,640	2,311,069	82
10.3776	12,287	(7,830)	(22,694,539)	25,644	2,307,097	82
10.3776	12,287	(7,833)	(22,702,372)	25,648	2,303,122	82
10.3776	12,287	(7,836)	(22,710,208)	25,653	2,299,145	82
10.3776	12,287	(7,839)	(22,718,048)	25,657	2,295,165	82
10.3776	12,287	(7,843)	(22,725,890)	25,661	2,291,183	82
10.3776	12,287	(7,846)	(22,733,736)	25,665	2,287,198	82
10.3776	12,287	(7,849)	(22,741,585)	25,669	2,283,210	82
10.3776	12,287	(7,852)	(22,749,437)	25,674	2,279,220	82
10.3776	12,287	(7,855)	(22,757,292)	25,678	2,275,227	82
10.3776	12,287	(7,858)	(22,765,150)	25,682	2,271,231	82
10.3776	12,287	(7,861)	(22,773,012)	25,686	2,267,233	82
10.3776	12,287	(7,865)	(22,780,877)	25,690	2,263,232	82
10.3776	12,287	(7,868)	(22,788,744)	25,695	2,259,228	82
10.3776	12,287	(7,871)	(22,796,615)	25,699	2,255,222	82
10.3776	12,287	(7,874)	(22,804,489)	25,703	2,251,213	82
10.3776	12,287	(7,877)	(22,812,367)	25,707	2,247,202	82

10.3776	12,287	(7,880)	(22,820,247)	25,711	2,243,188	82
10.3776	12,287	(7,884)	(22,828,131)	25,716	2,239,171	82
10.3776	12,287	(7,887)	(22,836,018)	25,720	2,235,151	82
10.3776	12,287	(7,890)	(22,843,907)	25,724	2,231,129	82
10.3776	12,287	(7,893)	(22,851,801)	25,728	2,227,104	82
10.3776	12,287	(7,896)	(22,859,697)	25,732	2,223,077	82
10.3776	12,287	(7,899)	(22,867,596)	25,737	2,219,047	82
10.3776	12,287	(7,903)	(22,875,499)	25,741	2,215,014	82
10.3776	12,287	(7,906)	(22,883,405)	25,745	2,210,978	82
10.3776	12,287	(7,909)	(22,891,314)	25,749	2,206,940	82
10.3776	12,287	(7,912)	(22,899,226)	25,753	2,202,899	82
10.3776	12,287	(7,915)	(22,907,141)	25,758	2,198,856	82
10.3776	12,287	(7,919)	(22,915,060)	25,762	2,194,810	82
10.3776	12,287	(7,922)	(22,922,981)	25,766	2,190,761	82
10.3776	12,287	(7,925)	(22,930,906)	25,770	2,186,709	82
10.3776	12,287	(7,928)	(22,938,834)	25,774	2,182,655	82
10.3776	12,287	(7,931)	(22,946,766)	25,779	2,178,598	82
10.3776	12,287	(7,934)	(22,954,700)	25,783	2,174,539	82
10.3776	12,287	(7,938)	(22,962,638)	25,787	2,170,477	82
10.3776	12,287	(7,941)	(22,970,578)	25,791	2,166,412	82
10.3776	12,287	(7,944)	(22,978,522)	25,795	2,162,344	82
10.3776	12,287	(7,947)	(22,986,470)	25,800	2,158,274	82
10.3776	12,287	(7,950)	(22,994,420)	25,804	2,154,201	82
10.3776	12,287	(7,954)	(23,002,374)	25,808	2,150,125	82
10.3776	12,287	(7,957)	(23,010,330)	25,812	2,146,047	82
10.3776	12,287	(7,960)	(23,018,290)	25,816	2,141,966	82
10.3776	12,287	(7,963)	(23,026,253)	25,821	2,137,882	82
10.3776	12,287	(7,966)	(23,034,220)	25,825	2,133,796	82
10.3776	12,287	(7,970)	(23,042,189)	25,829	2,129,707	82
10.3776	12,287	(7,973)	(23,050,162)	25,833	2,125,615	82
10.3776	12,287	(7,976)	(23,058,138)	25,837	2,121,521	82
10.3776	12,287	(7,979)	(23,066,117)	25,841	2,117,424	82
10.3776	12,287	(7,982)	(23,074,100)	25,846	2,113,324	82
10.3776	12,287	(7,986)	(23,082,085)	25,850	2,109,221	82
10.3776	12,287	(7,989)	(23,090,074)	25,854	2,105,116	82
10.3776	12,287	(7,992)	(23,098,066)	25,858	2,101,008	82
10.3776	12,287	(7,995)	(23,106,061)	25,862	2,096,898	82
10.3776	12,287	(7,998)	(23,114,060)	25,867	2,092,784	82
10.3776	12,287	(8,002)	(23,122,061)	25,871	2,088,668	82
10.3776	12,287	(8,005)	(23,130,066)	25,875	2,084,550	82
10.3776	12,287	(8,008)	(23,138,074)	25,879	2,080,428	82
10.3776	12,287	(8,011)	(23,146,086)	25,883	2,076,304	82
10.3776	12,287	(8,015)	(23,154,100)	25,888	2,072,177	82
10.3776	12,287	(8,018)	(23,162,118)	25,892	2,068,048	82
10.3776	12,287	(8,021)	(23,170,139)	25,896	2,063,915	82
10.3776	12,287	(8,024)	(23,178,163)	25,900	2,059,781	82
10.3776	12,287	(8,027)	(23,186,190)	25,904	2,055,643	82
10.3776	12,287	(8,031)	(23,194,221)	25,909	2,051,502	82
10.3776	12,287	(8,034)	(23,202,255)	25,913	2,047,359	82
10.3776	12,287	(8,037)	(23,210,292)	25,917	2,043,214	82
10.3776	12,287	(8,040)	(23,218,332)	25,921	2,039,065	82
10.3776	12,287	(8,044)	(23,226,376)	25,925	2,034,914	82
10.3776	12,287	(8,047)	(23,234,423)	25,930	2,030,760	82
10.3776	12,287	(8,050)	(23,242,473)	25,934	2,026,603	82
10.3776	12,287	(8,053)	(23,250,526)	25,938	2,022,444	82
10.3776	12,287	(8,057)	(23,258,583)	25,942	2,018,281	82

10.3776	12,287	(8,060)	(23,266,642)	25,946	2,014,117	82
10.3776	12,287	(8,063)	(23,274,705)	25,950	2,009,949	82
10.3776	12,287	(8,066)	(23,282,772)	25,955	2,005,779	82
10.3776	12,287	(8,069)	(23,290,841)	25,959	2,001,606	82
10.3776	12,287	(8,073)	(23,298,914)	25,963	1,997,430	82
10.3776	12,287	(4,682)	(25,527,591)	40,251	1,310,909	141
10.8512	8,411	(12,377)	(25,539,967)	40,258	1,306,727	61
10.8512	8,411	(12,382)	(25,552,350)	40,266	1,302,544	61
10.8512	8,411	(12,388)	(25,564,737)	40,274	1,298,357	61
10.8512	8,411	(12,393)	(25,577,131)	40,282	1,294,169	61
10.8512	8,411	(12,399)	(25,589,529)	40,290	1,289,977	61
10.8512	8,411	(12,404)	(25,601,934)	40,298	1,285,783	61
10.8512	8,411	(12,410)	(25,614,344)	40,306	1,281,586	61
10.8512	8,411	(12,415)	(25,626,759)	40,314	1,277,387	61
10.8512	8,411	(12,421)	(25,639,180)	40,322	1,273,185	61
10.8512	8,411	(12,426)	(25,651,606)	40,330	1,268,980	61
10.8512	8,411	(12,432)	(25,664,038)	40,338	1,264,773	61
10.8512	8,411	(12,437)	(25,676,475)	40,345	1,260,564	61
10.8512	8,411	(12,443)	(25,688,918)	40,353	1,256,351	61
10.8512	8,411	(12,448)	(25,701,367)	40,361	1,252,136	61
10.8512	8,411	(12,454)	(25,713,821)	40,369	1,247,919	61
10.8512	8,411	(12,460)	(25,726,280)	40,377	1,243,699	61
10.8512	8,411	(12,465)	(25,738,746)	40,385	1,239,476	61
10.8512	8,411	(12,471)	(25,751,216)	40,393	1,235,250	61
10.8512	8,411	(12,476)	(25,763,692)	40,401	1,231,022	61
10.8512	8,411	(12,482)	(25,776,174)	40,409	1,226,792	61
10.8512	8,411	(12,487)	(25,788,662)	40,417	1,222,559	61
10.8512	8,411	(12,493)	(25,801,154)	40,424	1,218,323	61
10.8512	8,411	(12,498)	(25,813,653)	40,432	1,214,084	61
10.8512	8,411	(12,504)	(25,826,157)	40,440	1,209,843	61
10.8512	8,411	(12,510)	(25,838,666)	40,448	1,205,599	61
10.8512	8,411	(12,515)	(25,851,181)	40,456	1,201,353	61
10.8512	8,411	(12,521)	(25,863,702)	40,464	1,197,104	61
10.8512	8,411	(12,526)	(25,876,228)	40,472	1,192,853	61
10.8512	8,411	(12,532)	(25,888,760)	40,480	1,188,598	61
10.8512	8,411	(12,537)	(25,901,297)	40,487	1,184,341	61
10.8512	8,411	(12,543)	(25,913,840)	40,495	1,180,082	61
10.8512	8,411	(12,549)	(25,926,389)	40,503	1,175,820	61
10.8512	8,411	(12,554)	(25,938,943)	40,511	1,171,555	61
10.8512	8,411	(12,560)	(25,951,503)	40,519	1,167,288	61
10.8512	8,411	(12,565)	(25,964,068)	40,527	1,163,018	61
10.8512	8,411	(12,571)	(25,976,639)	40,535	1,158,745	61
10.8512	8,411	(12,576)	(25,989,215)	40,543	1,154,470	61
10.8512	8,411	(12,582)	(26,001,797)	40,550	1,150,192	61
10.8512	8,411	(12,588)	(26,014,385)	40,558	1,145,911	61
10.8512	8,411	(12,593)	(26,026,978)	40,566	1,141,628	61
10.8512	8,411	(12,599)	(26,039,577)	40,574	1,137,342	61
10.8512	8,411	(12,604)	(26,052,181)	40,582	1,133,054	61
10.8512	8,411	(12,610)	(26,064,791)	40,590	1,128,763	61
10.8512	8,411	(12,616)	(26,077,407)	40,598	1,124,469	61
10.8512	8,411	(12,621)	(26,090,028)	40,606	1,120,173	61
10.8512	8,411	(12,627)	(26,102,655)	40,613	1,115,874	61
10.8512	8,411	(12,632)	(26,115,288)	40,621	1,111,572	61
10.8512	8,411	(12,638)	(26,127,926)	40,629	1,107,268	61
10.8512	8,411	(12,644)	(26,140,569)	40,637	1,102,961	61
10.8512	8,411	(12,649)	(26,153,219)	40,645	1,098,651	61

10.8512	8,411	(12,655)	(26,165,873)	40,653	1,094,339	61
10.8512	8,411	(12,661)	(26,178,534)	40,661	1,090,024	61
10.8512	8,411	(12,666)	(26,191,200)	40,668	1,085,706	61
10.8512	8,411	(12,672)	(26,203,872)	40,676	1,081,386	61
10.8512	8,411	(12,677)	(26,216,549)	40,684	1,077,063	61
10.8512	8,411	(12,683)	(26,229,232)	40,692	1,072,737	61
10.8512	8,411	(12,689)	(26,241,921)	40,700	1,068,409	61
10.8512	8,411	(12,694)	(26,254,616)	40,708	1,064,078	61
10.8512	8,411	(12,700)	(26,267,315)	40,715	1,059,745	61
10.8512	8,411	(12,706)	(26,280,021)	40,723	1,055,408	61
10.8512	8,411	(12,711)	(26,292,732)	40,731	1,051,070	61
10.8512	8,411	(12,717)	(26,305,449)	40,739	1,046,728	61
10.8512	8,411	(12,723)	(26,318,172)	40,747	1,042,384	61
10.8512	8,411	(12,728)	(26,330,900)	40,755	1,038,037	61
10.8512	8,411	(12,734)	(26,343,634)	40,762	1,033,687	61
10.8512	8,411	(12,740)	(26,356,373)	40,770	1,029,335	61
10.8512	8,411	(12,745)	(26,369,119)	40,778	1,024,980	61
10.8512	8,411	(12,751)	(26,381,869)	40,786	1,020,623	61
10.8512	8,411	(12,757)	(26,394,626)	40,794	1,016,262	61
10.8512	8,411	(12,762)	(26,407,388)	40,802	1,011,899	61
10.8512	8,411	(12,768)	(26,420,156)	40,809	1,007,534	61
10.8512	8,411	(12,774)	(26,432,929)	40,817	1,003,166	61
10.8512	8,411	(12,779)	(26,445,709)	40,825	998,795	61
10.8512	8,411	(12,785)	(26,458,494)	40,833	994,421	61
10.8512	8,411	(12,791)	(26,471,284)	40,841	990,045	61
10.8512	8,411	(12,796)	(26,484,080)	40,849	985,666	62
10.8512	8,411	(12,802)	(26,496,882)	40,856	981,284	62
10.8512	8,411	(12,808)	(26,509,690)	40,864	976,900	62
10.8512	8,411	(12,813)	(26,522,503)	40,872	972,513	62
10.8512	8,411	(12,819)	(26,535,322)	40,880	968,123	62
10.8512	8,411	(12,825)	(26,548,147)	40,888	963,730	62
10.8512	8,411	(12,830)	(26,560,977)	40,895	959,335	62
10.8512	8,411	(12,836)	(26,573,813)	40,903	954,937	62
10.8512	8,411	(12,842)	(26,586,655)	40,911	950,537	62
10.8512	8,411	(12,847)	(26,599,502)	40,919	946,134	62
10.8512	8,411	(12,853)	(26,612,355)	40,927	941,728	62
10.8512	8,411	(12,859)	(26,625,214)	40,934	937,319	62
10.8512	8,411	(12,865)	(26,638,079)	40,942	932,908	62
10.8512	8,411	(12,870)	(26,650,949)	40,950	928,494	62
10.8512	8,411	(12,876)	(26,663,825)	40,958	924,077	62
10.8512	8,411	(12,882)	(26,676,707)	40,966	919,658	62
10.8512	8,411	(12,887)	(26,689,594)	40,973	915,236	62
10.8512	8,411	(12,893)	(26,702,487)	40,981	910,811	62
10.8512	8,411	(12,899)	(26,715,386)	40,989	906,384	62
10.8512	8,411	(12,905)	(26,728,291)	40,997	901,953	62
10.8512	8,411	(12,910)	(26,741,201)	41,005	897,521	62
10.8512	8,411	(12,916)	(26,754,117)	41,012	893,085	62
10.8512	8,411	(12,922)	(26,767,039)	41,020	888,647	62
10.8512	8,411	(12,928)	(26,779,967)	41,028	884,206	62
10.8512	8,411	(12,933)	(26,792,900)	41,036	879,762	62
10.8512	8,411	(12,939)	(26,805,839)	41,044	875,315	62
10.8512	8,411	(12,945)	(26,818,784)	41,051	870,866	62
10.8512	8,411	(12,950)	(26,831,734)	41,059	866,414	62
10.8512	8,411	(12,956)	(26,844,690)	41,067	861,960	62
10.8512	8,411	(12,962)	(26,857,652)	41,075	857,502	62
10.8512	8,411	(12,968)	(26,870,620)	41,082	853,042	62

10.8512	8,411	(12,974)	(26,883,594)	41,090	848,580	62
10.8512	8,411	(12,979)	(26,896,573)	41,098	844,114	62
10.8512	8,411	(12,985)	(26,909,558)	41,106	839,646	62
10.8512	8,411	(12,991)	(26,922,549)	41,113	835,175	62
10.8512	8,411	(12,997)	(26,935,545)	41,121	830,702	62
10.8512	8,411	(13,002)	(26,948,548)	41,129	826,225	62
10.8512	8,411	(13,008)	(26,961,556)	41,137	821,746	62
10.8512	8,411	(13,014)	(26,974,570)	41,145	817,264	62
10.8512	8,411	(13,020)	(26,987,589)	41,152	812,780	62
10.8512	8,411	(13,025)	(27,000,615)	41,160	808,292	62
10.8512	8,411	(13,031)	(27,013,646)	41,168	803,802	62
10.8512	8,411	(13,037)	(27,026,683)	41,176	799,310	62
10.8512	8,411	(13,043)	(27,039,725)	41,183	794,814	62
10.8512	8,411	(13,049)	(27,052,774)	41,191	790,316	62
10.8512	8,411	(13,054)	(27,065,828)	41,199	785,815	62
10.8512	8,411	(13,060)	(27,078,888)	41,207	781,311	62
10.8512	8,411	(13,066)	(27,091,954)	41,214	776,805	62
10.8512	8,411	(13,072)	(27,105,026)	41,222	772,296	62
10.8512	8,411	(13,078)	(27,118,104)	41,230	767,784	62
10.8512	8,411	(13,083)	(27,131,187)	41,238	763,269	62
10.8512	8,411	(13,089)	(27,144,276)	41,245	758,752	62
10.8512	8,411	(13,095)	(27,157,371)	41,253	754,232	62
10.8512	8,411	(13,101)	(27,170,472)	41,261	749,709	62
10.8512	8,411	(13,107)	(27,183,578)	41,269	745,183	62
10.8512	8,411	(13,112)	(27,196,690)	41,276	740,655	62
10.8512	8,411	(13,118)	(27,209,809)	41,284	736,124	62
10.8512	8,411	(13,124)	(27,222,933)	41,292	731,590	62
10.8512	8,411	(13,130)	(27,236,062)	41,300	727,053	62
10.8512	8,411	(13,136)	(27,249,198)	41,307	722,514	62
10.8512	8,411	(13,141)	(27,262,339)	41,315	717,972	62
10.8512	8,411	(13,147)	(27,275,487)	41,323	713,427	62
10.8512	8,411	(13,153)	(27,288,640)	41,330	708,879	62
10.8512	8,411	(13,159)	(27,301,799)	41,338	704,329	62
10.8512	8,411	(13,165)	(27,314,964)	41,346	699,775	62
10.8512	8,411	(13,171)	(27,328,134)	41,354	695,219	62
10.8512	8,411	(13,176)	(27,341,311)	41,361	690,661	62
10.8512	8,411	(13,182)	(27,354,493)	41,369	686,099	62
10.8512	8,411	(13,188)	(27,367,681)	41,377	681,535	62
10.8512	8,411	(13,194)	(27,380,875)	41,384	676,968	62
10.8512	8,411	(13,200)	(27,394,075)	41,392	672,398	62
10.8512	8,411	(13,206)	(27,407,281)	41,400	667,826	62
10.8512	8,411	(13,212)	(27,420,492)	41,408	663,250	62
10.8512	8,411	(13,217)	(27,433,710)	41,415	658,672	62
10.8512	8,411	(13,223)	(27,446,933)	41,423	654,091	62
10.8512	8,411	(13,229)	(27,460,162)	41,431	649,508	62
10.8512	8,411	(13,235)	(27,473,397)	41,438	644,921	62
10.8512	8,411	(13,241)	(27,486,638)	41,446	640,332	62
10.8512	8,411	(13,247)	(27,499,884)	41,454	635,740	62
10.8512	8,411	(13,253)	(27,513,137)	41,462	631,146	62
10.8512	8,411	(13,258)	(27,526,396)	41,469	626,548	62
10.8512	8,411	(13,264)	(27,539,660)	41,477	621,948	62
10.8512	8,411	(13,270)	(27,552,930)	41,485	617,345	62
10.8512	8,411	(13,276)	(27,566,206)	41,492	612,739	62
10.8512	8,411	(13,282)	(27,579,488)	41,500	608,130	62
10.8512	8,411	(13,288)	(27,592,776)	41,508	603,519	62
10.8512	8,411	(13,294)	(27,606,070)	41,515	598,905	62

10.8512	8,411	(13,300)	(27,619,369)	41,523	594,288	62
10.8512	8,411	(13,306)	(27,632,675)	41,531	589,668	62
10.8512	8,411	(13,311)	(27,645,986)	41,538	585,045	62
10.8512	8,411	(13,317)	(27,659,304)	41,546	580,420	62
10.8512	8,411	(13,323)	(27,672,627)	41,554	575,792	62
10.8512	8,411	(13,329)	(27,685,956)	41,562	571,161	62
10.8512	8,411	(13,335)	(27,699,291)	41,569	566,527	62
10.8512	8,411	(13,341)	(27,712,632)	41,577	561,890	62
10.8512	8,411	(13,347)	(27,725,979)	41,585	557,251	62
10.8512	8,411	(13,353)	(27,739,332)	41,592	552,609	62
10.8512	8,411	(13,359)	(27,752,691)	41,600	547,964	62
10.8512	8,411	(13,365)	(27,766,055)	41,608	543,316	62
10.8512	8,411	(13,371)	(27,779,426)	41,615	538,666	62
10.8512	8,411	(13,376)	(27,792,802)	41,623	534,012	62
10.8512	8,411	(13,382)	(27,806,185)	41,631	529,356	62
10.8512	8,411	(13,388)	(27,819,573)	41,638	524,697	62
10.8512	8,411	(13,394)	(27,832,967)	41,646	520,035	62
10.8512	8,411	(13,400)	(27,846,367)	41,654	515,371	62
10.8512	8,411	(13,406)	(27,859,774)	41,661	510,703	62
10.8512	8,411	(13,412)	(27,873,186)	41,669	506,033	62
10.8512	8,411	(13,418)	(27,886,604)	41,677	501,360	62
10.8512	8,411	(17,573)	(29,451,802)	57,336	(468,940)	47
11.4633	2,574	(19,181)	(29,470,983)	57,348	(472,692)	48
11.4633	2,574	(19,191)	(29,490,174)	57,360	(476,445)	48
11.4633	2,574	(19,200)	(29,509,374)	57,373	(480,201)	48
11.4633	2,574	(19,209)	(29,528,583)	57,385	(483,958)	48
11.4633	2,574	(19,218)	(29,547,801)	57,397	(487,718)	48
11.4633	2,574	(19,228)	(29,567,029)	57,410	(491,480)	48
11.4633	2,574	(19,237)	(29,586,266)	57,422	(495,244)	48
11.4633	2,574	(19,246)	(29,605,512)	57,434	(499,009)	48
11.4633	2,574	(19,255)	(29,624,767)	57,446	(502,777)	48
11.4633	2,574	(19,265)	(29,644,032)	57,459	(506,547)	48
11.4633	2,574	(19,274)	(29,663,306)	57,471	(510,320)	48
11.4633	2,574	(19,283)	(29,682,589)	57,483	(514,094)	48
11.4633	2,574	(19,293)	(29,701,882)	57,495	(517,870)	48
11.4633	2,574	(19,302)	(29,721,184)	57,507	(521,648)	48
11.4633	2,574	(19,311)	(29,740,495)	57,520	(525,429)	48
11.4633	2,574	(19,320)	(29,759,815)	57,532	(529,211)	48
11.4633	2,574	(19,330)	(29,779,145)	57,544	(532,996)	48
11.4633	2,574	(19,339)	(29,798,484)	57,556	(536,783)	48
11.4633	2,574	(19,348)	(29,817,832)	57,569	(540,571)	48
11.4633	2,574	(19,358)	(29,837,190)	57,581	(544,362)	48
11.4633	2,574	(19,367)	(29,856,557)	57,593	(548,155)	48
11.4633	2,574	(19,376)	(29,875,933)	57,605	(551,950)	48
11.4633	2,574	(19,386)	(29,895,318)	57,617	(555,747)	48
11.4633	2,574	(19,395)	(29,914,713)	57,630	(559,546)	48
11.4633	2,574	(19,404)	(29,934,117)	57,642	(563,347)	48
11.4633	2,574	(19,413)	(29,953,531)	57,654	(567,151)	48
11.4633	2,574	(19,423)	(29,972,954)	57,666	(570,956)	48
11.4633	2,574	(19,432)	(29,992,386)	57,678	(574,764)	48
11.4633	2,574	(19,442)	(30,011,827)	57,691	(578,573)	48
11.4633	2,574	(19,451)	(30,031,278)	57,703	(582,385)	48
11.4633	2,574	(19,460)	(30,050,738)	57,715	(586,199)	48
11.4633	2,574	(19,470)	(30,070,208)	57,727	(590,014)	48
11.4633	2,574	(19,479)	(30,089,687)	57,739	(593,832)	48
11.4633	2,574	(19,488)	(30,109,175)	57,751	(597,652)	48

11.4633	2,574	(19,498)	(30,128,673)	57,764	(601,474)	48
11.4633	2,574	(19,507)	(30,148,180)	57,776	(605,299)	49
11.4633	2,574	(19,516)	(30,167,696)	57,788	(609,125)	49
11.4633	2,574	(19,526)	(30,187,222)	57,800	(612,953)	49
11.4633	2,574	(19,535)	(30,206,757)	57,812	(616,784)	49
11.4633	2,574	(19,545)	(30,226,301)	57,824	(620,616)	49
11.4633	2,574	(19,554)	(30,245,855)	57,837	(624,451)	49
11.4633	2,574	(19,563)	(30,265,419)	57,849	(628,288)	49
11.4633	2,574	(19,573)	(30,284,991)	57,861	(632,127)	49
11.4633	2,574	(19,582)	(30,304,573)	57,873	(635,968)	49
11.4633	2,574	(19,591)	(30,324,165)	57,885	(639,811)	49
11.4633	2,574	(19,601)	(30,343,766)	57,897	(643,656)	49
11.4633	2,574	(19,610)	(30,363,376)	57,909	(647,503)	49
11.4633	2,574	(19,620)	(30,382,996)	57,922	(651,353)	49
11.4633	2,574	(19,629)	(30,402,625)	57,934	(655,204)	49
11.4633	2,574	(19,639)	(30,422,264)	57,946	(659,058)	49
11.4633	2,574	(19,648)	(30,441,912)	57,958	(662,914)	49
11.4633	2,574	(19,657)	(30,461,569)	57,970	(666,771)	49
11.4633	2,574	(19,667)	(30,481,236)	57,982	(670,631)	49
11.4633	2,574	(19,676)	(30,500,912)	57,994	(674,493)	49
11.4633	2,574	(19,686)	(30,520,598)	58,006	(678,357)	49
11.4633	2,574	(19,695)	(30,540,293)	58,018	(682,224)	49
11.4633	2,574	(19,705)	(30,559,998)	58,031	(686,092)	49
11.4633	2,574	(19,714)	(30,579,712)	58,043	(689,963)	49
11.4633	2,574	(19,724)	(30,599,435)	58,055	(693,835)	49
11.4633	2,574	(19,733)	(30,619,169)	58,067	(697,710)	49
11.4633	2,574	(19,743)	(30,638,911)	58,079	(701,587)	49
11.4633	2,574	(19,752)	(30,658,663)	58,091	(705,466)	49
11.4633	2,574	(19,761)	(30,678,424)	58,103	(709,347)	49
11.4633	2,574	(19,771)	(30,698,195)	58,115	(713,230)	49
11.4633	2,574	(19,780)	(30,717,976)	58,127	(717,115)	49
11.4633	2,574	(19,790)	(30,737,766)	58,139	(721,003)	49
11.4633	2,574	(19,799)	(30,757,565)	58,151	(724,892)	49
11.4633	2,574	(19,809)	(30,777,374)	58,163	(728,784)	49
11.4633	2,574	(19,818)	(30,797,192)	58,175	(732,678)	49
11.4633	2,574	(19,828)	(30,817,020)	58,187	(736,573)	49
11.4633	2,574	(19,837)	(30,836,858)	58,200	(740,472)	49
11.4633	2,574	(19,847)	(30,856,705)	58,212	(744,372)	49
11.4633	2,574	(19,856)	(30,876,561)	58,224	(748,274)	49
11.4633	2,574	(19,866)	(30,896,427)	58,236	(752,178)	49
11.4633	2,574	(19,875)	(30,916,303)	58,248	(756,085)	49
11.4633	2,574	(19,885)	(30,936,188)	58,260	(759,994)	49
11.4633	2,574	(19,895)	(30,956,082)	58,272	(763,904)	49
11.4633	2,574	(19,904)	(30,975,986)	58,284	(767,817)	49
11.4633	2,574	(19,914)	(30,995,900)	58,296	(771,732)	49
11.4633	2,574	(19,923)	(31,015,823)	58,308	(775,649)	49
11.4633	2,574	(19,933)	(31,035,756)	58,320	(779,569)	49
11.4633	2,574	(19,942)	(31,055,698)	58,332	(783,490)	49
11.4633	2,574	(19,952)	(31,075,650)	58,344	(787,414)	49
11.4633	2,574	(19,961)	(31,095,611)	58,356	(791,340)	49
11.4633	2,574	(19,971)	(31,115,582)	58,368	(795,267)	49
11.4633	2,574	(19,981)	(31,135,563)	58,380	(799,197)	49
11.4633	2,574	(19,990)	(31,155,553)	58,392	(803,130)	49
11.4633	2,574	(20,000)	(31,175,553)	58,404	(807,064)	49
11.4633	2,574	(20,009)	(31,195,562)	58,416	(811,000)	49
11.4633	2,574	(20,019)	(31,215,581)	58,428	(814,939)	49

11.4633	2,574	(20,028)	(31,235,609)	58,440	(818,879)	49
11.4633	2,574	(20,038)	(31,255,647)	58,452	(822,822)	49
11.4633	2,574	(20,048)	(31,275,695)	58,464	(826,767)	49
11.4633	2,574	(20,057)	(31,295,752)	58,476	(830,714)	49
11.4633	2,574	(20,067)	(31,315,819)	58,488	(834,664)	49
11.4633	2,574	(20,076)	(31,335,895)	58,500	(838,615)	49
11.4633	2,574	(20,086)	(31,355,981)	58,512	(842,569)	49
11.4633	2,574	(20,096)	(31,376,077)	58,524	(846,524)	49
11.4633	2,574	(20,105)	(31,396,182)	58,535	(850,482)	49
11.4633	2,574	(20,115)	(31,416,297)	58,547	(854,442)	49
11.4633	2,574	(20,125)	(31,436,422)	58,559	(858,404)	49
11.4633	2,574	(20,134)	(31,456,556)	58,571	(862,369)	49
11.4633	2,574	(20,144)	(31,476,700)	58,583	(866,335)	49
11.4633	2,574	(20,153)	(31,496,854)	58,595	(870,304)	49
11.4633	2,574	(20,163)	(31,517,017)	58,607	(874,274)	49
11.4633	2,574	(20,173)	(31,537,189)	58,619	(878,247)	49
11.4633	2,574	(20,182)	(31,557,372)	58,631	(882,222)	49
11.4633	2,574	(20,192)	(31,577,564)	58,643	(886,200)	49
11.4633	2,574	(20,202)	(31,597,766)	58,655	(890,179)	49
11.4633	2,574	(20,211)	(31,617,977)	58,667	(894,161)	49
11.4633	2,574	(20,221)	(31,638,198)	58,679	(898,144)	49
11.4633	2,574	(20,231)	(31,658,429)	58,691	(902,130)	49
11.4633	2,574	(20,240)	(31,678,670)	58,702	(906,118)	49
11.4633	2,574	(20,250)	(31,698,920)	58,714	(910,108)	49
11.4633	2,574	(20,260)	(31,719,180)	58,726	(914,101)	49
11.4633	2,574	(20,270)	(31,739,449)	58,738	(918,095)	49
11.4633	2,574	(20,279)	(31,759,728)	58,750	(922,092)	49
11.4633	2,574	(20,289)	(31,780,017)	58,762	(926,091)	49
11.4633	2,574	(20,299)	(31,800,316)	58,774	(930,092)	49
11.4633	2,574	(20,308)	(31,820,624)	58,786	(934,095)	49
11.4633	2,574	(20,318)	(31,840,942)	58,798	(938,100)	49
11.4633	2,574	(20,328)	(31,861,270)	58,809	(942,108)	49
11.4633	2,574	(20,337)	(31,881,608)	58,821	(946,118)	49
11.4633	2,574	(20,347)	(31,901,955)	58,833	(950,129)	49
11.4633	2,574	(20,357)	(31,922,312)	58,845	(954,143)	49
11.4633	2,574	(20,367)	(31,942,679)	58,857	(958,160)	49
11.4633	2,574	(20,376)	(31,963,055)	58,869	(962,178)	49
11.4633	2,574	(20,386)	(31,983,441)	58,881	(966,199)	49
11.4633	2,574	(20,396)	(32,003,837)	58,892	(970,221)	49
11.4633	2,574	(20,406)	(32,024,243)	58,904	(974,246)	49
11.4633	2,574	(20,415)	(32,044,658)	58,916	(978,273)	49
11.4633	2,574	(20,425)	(32,065,083)	58,928	(982,302)	49
11.4633	2,574	(20,435)	(32,085,518)	58,940	(986,334)	49
11.4633	2,574	(20,445)	(32,105,963)	58,952	(990,368)	49
11.4633	2,574	(20,454)	(32,126,417)	58,963	(994,403)	49
11.4633	2,574	(20,464)	(32,146,882)	58,975	(998,441)	49
11.4633	2,574	(20,474)	(32,167,356)	58,987	(1,002,481)	49
11.4633	2,574	(20,484)	(32,187,840)	58,999	(1,006,524)	49
11.4633	2,574	(20,494)	(32,208,333)	59,011	(1,010,568)	49
11.4633	2,574	(20,503)	(32,228,837)	59,022	(1,014,615)	49
11.4633	2,574	(20,513)	(32,249,350)	59,034	(1,018,664)	49
11.4633	2,574	(20,523)	(32,269,873)	59,046	(1,022,715)	49
11.4633	2,574	(20,533)	(32,290,406)	59,058	(1,026,768)	49
11.4633	2,574	(20,543)	(32,310,948)	59,070	(1,030,824)	49
11.4633	2,574	(20,552)	(32,331,501)	59,081	(1,034,881)	49
11.4633	2,574	(20,562)	(32,352,063)	59,093	(1,038,941)	49

11.4633	2,574	(20,572)	(32,372,635)	59,105	(1,043,003)	49
11.4633	2,574	(20,582)	(32,393,217)	59,117	(1,047,067)	49
11.4633	2,574	(20,592)	(32,413,809)	59,128	(1,051,134)	49
11.4633	2,574	(20,602)	(32,434,410)	59,140	(1,055,203)	49
11.4633	2,574	(20,611)	(32,455,021)	59,152	(1,059,273)	49
11.4633	2,574	(20,621)	(32,475,643)	59,164	(1,063,346)	49
11.4633	2,574	(20,631)	(32,496,274)	59,175	(1,067,422)	49
11.4633	2,574	(20,641)	(32,516,915)	59,187	(1,071,499)	49
11.4633	2,574	(20,651)	(32,537,565)	59,199	(1,075,579)	49
11.4633	2,574	(20,661)	(32,558,226)	59,211	(1,079,660)	49
11.4633	2,574	(20,671)	(32,578,897)	59,222	(1,083,744)	49
11.4633	2,574	(20,680)	(32,599,577)	59,234	(1,087,831)	49
11.4633	2,574	(20,690)	(32,620,267)	59,246	(1,091,919)	49
11.4633	2,574	(20,700)	(32,640,967)	59,258	(1,096,010)	49
11.4633	2,574	(20,710)	(32,661,677)	59,269	(1,100,102)	49
11.4633	2,574	(20,720)	(32,682,397)	59,281	(1,104,197)	50
11.4633	2,574	(20,730)	(32,703,127)	59,293	(1,108,295)	50
11.4633	2,574	(20,740)	(32,723,867)	59,305	(1,112,394)	50
11.4633	2,574	(20,750)	(32,744,616)	59,316	(1,116,496)	50
11.4633	2,574	(20,759)	(32,765,376)	59,328	(1,120,599)	50
11.4633	2,574	(20,769)	(32,786,145)	59,340	(1,124,705)	50
11.4633	2,574	(20,779)	(32,806,924)	59,351	(1,128,814)	50
11.4633	2,574	(20,789)	(32,827,714)	59,363	(1,132,924)	50
11.4633	2,574	(20,799)	(32,848,513)	59,375	(1,137,037)	50
11.4633	2,574	(20,809)	(32,869,322)	59,386	(1,141,152)	50
11.4633	2,574	(20,819)	(32,890,141)	59,398	(1,145,269)	50
11.4633	2,574	(20,829)	(32,910,970)	59,410	(1,149,388)	50
11.4633	2,574	(20,839)	(32,931,808)	59,421	(1,153,510)	50
11.4633	2,574	(20,849)	(32,952,657)	59,433	(1,157,634)	50
11.4633	2,574	(20,859)	(32,973,516)	59,445	(1,161,760)	50
11.4633	2,574	(20,869)	(32,994,385)	59,456	(1,165,888)	50
11.4633	2,574	(20,879)	(33,015,263)	59,468	(1,170,018)	50
11.4633	2,574	(20,889)	(33,036,152)	59,480	(1,174,151)	50
11.4633	2,574	(20,899)	(33,057,050)	59,491	(1,178,286)	50
11.4633	2,574	(26,334)	(33,549,242)	41,141	19,858	39
12.1127	(73,281)	(14,571)	(33,563,813)	41,146	15,742	76
12.1127	(73,281)	(14,577)	(33,578,390)	41,151	11,623	76
12.1127	(73,281)	(14,583)	(33,592,973)	41,157	7,501	76
12.1127	(73,281)	(14,589)	(33,607,561)	41,162	3,377	76
12.1127	(73,281)	(14,595)	(33,622,156)	41,167	(750)	76
12.1127	(73,281)	(14,601)	(33,636,757)	41,172	(4,879)	76
12.1127	(73,281)	(14,607)	(33,651,363)	41,178	(9,010)	76
12.1127	(73,281)	(14,613)	(33,665,976)	41,183	(13,145)	76
12.1127	(73,281)	(14,618)	(33,680,594)	41,188	(17,281)	76
12.1127	(73,281)	(14,624)	(33,695,218)	41,194	(21,421)	76
12.1127	(73,281)	(14,630)	(33,709,849)	41,199	(25,562)	76
12.1127	(73,281)	(14,636)	(33,724,485)	41,204	(29,707)	76
12.1127	(73,281)	(14,642)	(33,739,128)	41,209	(33,854)	76
12.1127	(73,281)	(14,648)	(33,753,776)	41,215	(38,003)	76
12.1127	(73,281)	(14,654)	(33,768,430)	41,220	(42,155)	76
12.1127	(73,281)	(14,660)	(33,783,090)	41,225	(46,310)	76
12.1127	(73,281)	(14,666)	(33,797,757)	41,230	(50,467)	76
12.1127	(73,281)	(14,672)	(33,812,429)	41,236	(54,626)	76
12.1127	(73,281)	(14,678)	(33,827,107)	41,241	(58,788)	76
12.1127	(73,281)	(14,684)	(33,841,791)	41,246	(62,953)	76
12.1127	(73,281)	(14,690)	(33,856,481)	41,251	(67,120)	76

12.1127	(73,281)	(14,696)	(33,871,177)	41,257	(71,290)	76
12.1127	(73,281)	(14,702)	(33,885,880)	41,262	(75,463)	76
12.1127	(73,281)	(14,708)	(33,900,588)	41,267	(79,638)	76
12.1127	(73,281)	(14,714)	(33,915,302)	41,272	(83,815)	76
12.1127	(73,281)	(14,720)	(33,930,022)	41,278	(87,995)	76
12.1127	(73,281)	(14,726)	(33,944,748)	41,283	(92,178)	76
12.1127	(73,281)	(14,732)	(33,959,480)	41,288	(96,363)	76
12.1127	(73,281)	(14,738)	(33,974,218)	41,293	(100,551)	76
12.1127	(73,281)	(14,744)	(33,988,962)	41,298	(104,741)	76
12.1127	(73,281)	(14,750)	(34,003,713)	41,304	(108,934)	76
12.1127	(73,281)	(14,756)	(34,018,469)	41,309	(113,129)	76
12.1127	(73,281)	(14,762)	(34,033,231)	41,314	(117,327)	76
12.1127	(73,281)	(14,768)	(34,047,999)	41,319	(121,528)	76
12.1127	(73,281)	(14,774)	(34,062,773)	41,325	(125,731)	76
12.1127	(73,281)	(14,780)	(34,077,554)	41,330	(129,937)	76
12.1127	(73,281)	(14,786)	(34,092,340)	41,335	(134,145)	76
12.1127	(73,281)	(14,792)	(34,107,132)	41,340	(138,356)	76
12.1127	(73,281)	(14,798)	(34,121,930)	41,345	(142,569)	76
12.1127	(73,281)	(14,804)	(34,136,735)	41,350	(146,785)	76
12.1127	(73,281)	(14,810)	(34,151,545)	41,356	(151,003)	76
12.1127	(73,281)	(14,816)	(34,166,362)	41,361	(155,225)	76
12.1127	(73,281)	(14,822)	(34,181,184)	41,366	(159,448)	76
12.1127	(73,281)	(14,828)	(34,196,012)	41,371	(163,675)	76
12.1127	(73,281)	(14,835)	(34,210,847)	41,376	(167,903)	76
12.1127	(73,281)	(14,841)	(34,225,688)	41,382	(172,135)	76
12.1127	(73,281)	(14,847)	(34,240,534)	41,387	(176,369)	77
12.1127	(73,281)	(14,853)	(34,255,387)	41,392	(180,605)	77
12.1127	(73,281)	(14,859)	(34,270,246)	41,397	(184,845)	77
12.1127	(73,281)	(14,865)	(34,285,110)	41,402	(189,086)	77
12.1127	(73,281)	(14,871)	(34,299,981)	41,407	(193,331)	77
12.1127	(73,281)	(14,877)	(34,314,858)	41,413	(197,578)	77
12.1127	(73,281)	(14,883)	(34,329,741)	41,418	(201,827)	77
12.1127	(73,281)	(14,889)	(34,344,630)	41,423	(206,079)	77
12.1127	(73,281)	(14,895)	(34,359,525)	41,428	(210,334)	77
12.1127	(73,281)	(14,901)	(34,374,426)	41,433	(214,591)	77
12.1127	(73,281)	(14,907)	(34,389,334)	41,438	(218,851)	77
12.1127	(73,281)	(14,913)	(34,404,247)	41,443	(223,114)	77
12.1127	(73,281)	(14,919)	(34,419,166)	41,449	(227,379)	77
12.1127	(73,281)	(14,925)	(34,434,092)	41,454	(231,647)	77
12.1127	(73,281)	(14,932)	(34,449,023)	41,459	(235,917)	77
12.1127	(73,281)	(14,938)	(34,463,961)	41,464	(240,190)	77
12.1127	(73,281)	(14,944)	(34,478,905)	41,469	(244,465)	77
12.1127	(73,281)	(14,950)	(34,493,854)	41,474	(248,743)	77
12.1127	(73,281)	(14,956)	(34,508,810)	41,479	(253,024)	77
12.1127	(73,281)	(14,962)	(34,523,772)	41,484	(257,307)	77
12.1127	(73,281)	(14,968)	(34,538,740)	41,490	(261,593)	77
12.1127	(73,281)	(14,974)	(34,553,715)	41,495	(265,882)	77
12.1127	(73,281)	(14,980)	(34,568,695)	41,500	(270,173)	77
12.1127	(73,281)	(14,986)	(34,583,681)	41,505	(274,467)	77
12.1127	(73,281)	(14,992)	(34,598,674)	41,510	(278,763)	77
12.1127	(73,281)	(14,999)	(34,613,672)	41,515	(283,062)	77
12.1127	(73,281)	(15,005)	(34,628,677)	41,520	(287,363)	77
12.1127	(73,281)	(15,011)	(34,643,688)	41,525	(291,668)	77
12.1127	(73,281)	(15,017)	(34,658,705)	41,530	(295,974)	77
12.1127	(73,281)	(15,023)	(34,673,728)	41,535	(300,284)	77
12.1127	(73,281)	(15,029)	(34,688,757)	41,540	(304,596)	77

12.1127	(73,281)	(15,035)	(34,703,792)	41,546	(308,910)	77
12.1127	(73,281)	(15,041)	(34,718,834)	41,551	(313,228)	77
12.1127	(73,281)	(15,048)	(34,733,881)	41,556	(317,548)	77
12.1127	(73,281)	(15,054)	(34,748,935)	41,561	(321,870)	77
12.1127	(73,281)	(15,060)	(34,763,995)	41,566	(326,195)	77
12.1127	(73,281)	(15,066)	(34,779,060)	41,571	(330,523)	77
12.1127	(73,281)	(15,072)	(34,794,132)	41,576	(334,853)	77
12.1127	(73,281)	(15,078)	(34,809,211)	41,581	(339,186)	77
12.1127	(73,281)	(15,084)	(34,824,295)	41,586	(343,522)	77
12.1127	(73,281)	(15,090)	(34,839,386)	41,591	(347,860)	77
12.1127	(73,281)	(15,097)	(34,854,482)	41,596	(352,201)	77
12.1127	(73,281)	(15,103)	(34,869,585)	41,601	(356,545)	77
12.1127	(73,281)	(15,109)	(34,884,694)	41,606	(360,891)	77
12.1127	(73,281)	(15,115)	(34,899,809)	41,611	(365,240)	77
12.1127	(73,281)	(15,121)	(34,914,930)	41,616	(369,591)	77
12.1127	(73,281)	(15,127)	(34,930,058)	41,621	(373,945)	77
12.1127	(73,281)	(15,134)	(34,945,191)	41,626	(378,302)	77
12.1127	(73,281)	(15,140)	(34,960,331)	41,631	(382,661)	77
12.1127	(73,281)	(15,146)	(34,975,477)	41,636	(387,023)	77
12.1127	(73,281)	(15,152)	(34,990,629)	41,641	(391,388)	77
12.1127	(73,281)	(15,158)	(35,005,787)	41,646	(395,755)	77
12.1127	(73,281)	(15,164)	(35,020,951)	41,651	(400,125)	77
12.1127	(73,281)	(15,171)	(35,036,122)	41,656	(404,498)	77
12.1127	(73,281)	(15,177)	(35,051,299)	41,661	(408,873)	77
12.1127	(73,281)	(15,183)	(35,066,482)	41,666	(413,251)	77
12.1127	(73,281)	(15,189)	(35,081,671)	41,671	(417,631)	77
12.1127	(73,281)	(15,195)	(35,096,866)	41,676	(422,014)	77
12.1127	(73,281)	(15,201)	(35,112,067)	41,681	(426,400)	77
12.1127	(73,281)	(15,208)	(35,127,275)	41,686	(430,788)	77
12.1127	(73,281)	(15,214)	(35,142,489)	41,691	(435,180)	77
12.1127	(73,281)	(15,220)	(35,157,709)	41,696	(439,573)	77
12.1127	(73,281)	(15,226)	(35,172,935)	41,701	(443,970)	77
12.1127	(73,281)	(15,232)	(35,188,168)	41,706	(448,369)	77
12.1127	(73,281)	(15,239)	(35,203,406)	41,711	(452,771)	77
12.1127	(73,281)	(15,245)	(35,218,651)	41,716	(457,175)	77
12.1127	(73,281)	(15,251)	(35,233,902)	41,721	(461,582)	77
12.1127	(73,281)	(15,257)	(35,249,159)	41,726	(465,992)	77
12.1127	(73,281)	(15,263)	(35,264,423)	41,731	(470,404)	77
12.1127	(73,281)	(15,270)	(35,279,692)	41,736	(474,819)	77
12.1127	(73,281)	(15,276)	(35,294,968)	41,741	(479,237)	77
12.1127	(73,281)	(15,282)	(35,310,250)	41,746	(483,657)	77
12.1127	(73,281)	(15,288)	(35,325,539)	41,751	(488,080)	77
12.1127	(73,281)	(15,295)	(35,340,833)	41,756	(492,506)	77
12.1127	(73,281)	(15,301)	(35,356,134)	41,761	(496,934)	77
12.1127	(73,281)	(15,307)	(35,371,441)	41,766	(501,366)	77
12.1127	(73,281)	(15,313)	(35,386,754)	41,771	(505,799)	77
12.1127	(73,281)	(15,319)	(35,402,074)	41,776	(510,236)	77
12.1127	(73,281)	(15,326)	(35,417,400)	41,781	(514,675)	77
12.1127	(73,281)	(15,332)	(35,432,732)	41,786	(519,116)	77
12.1127	(73,281)	(15,338)	(35,448,070)	41,791	(523,561)	77
12.1127	(73,281)	(15,344)	(35,463,414)	41,795	(528,008)	77
12.1127	(73,281)	(15,351)	(35,478,765)	41,800	(532,458)	77
12.1127	(73,281)	(15,357)	(35,494,122)	41,805	(536,910)	77
12.1127	(73,281)	(15,363)	(35,509,485)	41,810	(541,365)	77
12.1127	(73,281)	(15,369)	(35,524,854)	41,815	(545,823)	77
12.1127	(73,281)	(15,376)	(35,540,230)	41,820	(550,284)	77

12.1127	(73,281)	(15,382)	(35,555,612)	41,825	(554,747)	77
12.1127	(73,281)	(15,388)	(35,571,000)	41,830	(559,213)	77
12.1127	(73,281)	(15,394)	(35,586,395)	41,835	(563,682)	77
12.1127	(73,281)	(15,401)	(35,601,795)	41,840	(568,153)	77
12.1127	(73,281)	(15,407)	(35,617,202)	41,844	(572,627)	77
12.1127	(73,281)	(15,413)	(35,632,616)	41,849	(577,104)	77
12.1127	(73,281)	(15,420)	(35,648,035)	41,854	(581,583)	77
12.1127	(73,281)	(15,426)	(35,663,461)	41,859	(586,065)	77
12.1127	(73,281)	(15,432)	(35,678,893)	41,864	(590,550)	77
12.1127	(73,281)	(15,438)	(35,694,331)	41,869	(595,037)	77
12.1127	(73,281)	(15,445)	(35,709,776)	41,874	(599,527)	77
12.1127	(73,281)	(15,451)	(35,725,227)	41,879	(604,020)	77
12.1127	(73,281)	(15,457)	(35,740,684)	41,883	(608,516)	77
12.1127	(73,281)	(15,463)	(35,756,148)	41,888	(613,014)	77
12.1127	(73,281)	(15,470)	(35,771,617)	41,893	(617,515)	77
12.1127	(73,281)	(15,476)	(35,787,093)	41,898	(622,019)	77
12.1127	(73,281)	(15,482)	(35,802,576)	41,903	(626,525)	77
12.1127	(73,281)	(15,489)	(35,818,064)	41,908	(631,034)	77
12.1127	(73,281)	(15,495)	(35,833,559)	41,913	(635,546)	77
12.1127	(73,281)	(15,501)	(35,849,061)	41,917	(640,060)	77
12.1127	(73,281)	(15,508)	(35,864,568)	41,922	(644,578)	77
12.1127	(73,281)	(15,514)	(35,880,082)	41,927	(649,098)	77
12.1127	(73,281)	(15,520)	(35,895,602)	41,932	(653,620)	77
12.1127	(73,281)	(15,527)	(35,911,129)	41,937	(658,146)	77
12.1127	(73,281)	(15,533)	(35,926,662)	41,942	(662,674)	77
12.1127	(73,281)	(15,539)	(35,942,201)	41,946	(667,204)	77
12.1127	(73,281)	(15,545)	(35,957,746)	41,951	(671,738)	77
12.1127	(73,281)	(15,552)	(35,973,298)	41,956	(676,274)	77
12.1127	(73,281)	(15,558)	(35,988,856)	41,961	(680,813)	77
12.1127	(73,281)	(15,564)	(36,004,421)	41,966	(685,355)	77
12.1127	(73,281)	(15,571)	(36,019,992)	41,970	(689,899)	77
12.1127	(73,281)	(15,577)	(36,035,569)	41,975	(694,446)	77
12.1127	(73,281)	(15,583)	(36,051,152)	41,980	(698,996)	77
12.1127	(73,281)	(15,590)	(36,066,742)	41,985	(703,549)	77
12.1127	(73,281)	(15,596)	(36,082,338)	41,990	(708,104)	77
12.1127	(73,281)	(15,602)	(36,097,941)	41,994	(712,662)	77
12.1127	(73,281)	(15,609)	(36,113,549)	41,999	(717,223)	77
12.1127	(73,281)	(15,615)	(36,129,165)	42,004	(721,786)	77
12.1127	(73,281)	(15,622)	(36,144,786)	42,009	(726,352)	77
12.1127	(73,281)	(15,628)	(36,160,414)	42,014	(730,921)	77
12.1127	(73,281)	(15,634)	(36,176,048)	42,018	(735,493)	77
12.1127	(73,281)	(15,641)	(36,191,689)	42,023	(740,068)	77
12.1127	(73,281)	(15,647)	(36,207,336)	42,028	(744,645)	77
12.1127	(73,281)	(15,653)	(36,222,989)	42,033	(749,225)	77
12.1127	(73,281)	(15,660)	(36,238,649)	42,037	(753,807)	77
12.1127	(73,281)	(15,666)	(36,254,315)	42,042	(758,393)	77
12.1127	(73,281)	(15,672)	(36,269,987)	42,047	(762,981)	77
12.1127	(73,281)	(15,679)	(36,285,666)	42,052	(767,572)	77
12.1127	(73,281)	(15,685)	(36,301,351)	42,056	(772,165)	77
12.1127	(73,281)	(15,692)	(36,317,043)	42,061	(776,762)	77
12.1127	(73,281)	(13,861)	(22,847,245)	23,917	(467,765)	87
12.2794	(71,516)	(9,695)	(22,856,939)	23,919	(467,663)	79
12.2794	(71,516)	(9,698)	(22,866,638)	23,922	(467,561)	79
12.2794	(71,516)	(9,702)	(22,876,340)	23,924	(467,459)	79
12.2794	(71,516)	(9,706)	(22,886,046)	23,926	(467,356)	79
12.2794	(71,516)	(9,710)	(22,895,757)	23,928	(467,254)	79

12.2794	(71,516)	(9,714)	(22,905,471)	23,930	(467,151)	79
12.2794	(71,516)	(9,718)	(22,915,189)	23,933	(467,048)	79
12.2794	(71,516)	(9,722)	(22,924,911)	23,935	(466,945)	79
12.2794	(71,516)	(9,726)	(22,934,637)	23,937	(466,842)	79
12.2794	(71,516)	(9,730)	(22,944,366)	23,939	(466,739)	79
12.2794	(71,516)	(9,734)	(22,954,100)	23,941	(466,635)	79
12.2794	(71,516)	(9,738)	(22,963,838)	23,944	(466,532)	79
12.2794	(71,516)	(9,742)	(22,973,579)	23,946	(466,428)	79
12.2794	(71,516)	(9,745)	(22,983,325)	23,948	(466,325)	79
12.2794	(71,516)	(9,749)	(22,993,074)	23,950	(466,221)	79
12.2794	(71,516)	(9,753)	(23,002,827)	23,952	(466,117)	79
12.2794	(71,516)	(9,757)	(23,012,585)	23,955	(466,012)	79
12.2794	(71,516)	(9,761)	(23,022,346)	23,957	(465,908)	79
12.2794	(71,516)	(9,765)	(23,032,111)	23,959	(465,804)	79
12.2794	(71,516)	(9,769)	(23,041,880)	23,961	(465,699)	79
12.2794	(71,516)	(9,773)	(23,051,653)	23,963	(465,594)	79
12.2794	(71,516)	(9,777)	(23,061,430)	23,965	(465,489)	79
12.2794	(71,516)	(9,781)	(23,071,211)	23,968	(465,384)	79
12.2794	(71,516)	(9,785)	(23,080,996)	23,970	(465,279)	79
12.2794	(71,516)	(9,789)	(23,090,784)	23,972	(465,174)	79
12.2794	(71,516)	(9,793)	(23,100,577)	23,974	(465,068)	79
12.2794	(71,516)	(9,797)	(23,110,374)	23,976	(464,963)	79
12.2794	(71,516)	(9,801)	(23,120,174)	23,978	(464,857)	79
12.2794	(71,516)	(9,805)	(23,129,979)	23,981	(464,751)	79
12.2794	(71,516)	(9,808)	(23,139,787)	23,983	(464,645)	79
12.2794	(71,516)	(9,812)	(23,149,599)	23,985	(464,539)	79
12.2794	(71,516)	(9,816)	(23,159,416)	23,987	(464,433)	79
12.2794	(71,516)	(9,820)	(23,169,236)	23,989	(464,327)	79
12.2794	(71,516)	(9,824)	(23,179,060)	23,991	(464,220)	79
12.2794	(71,516)	(9,828)	(23,188,889)	23,993	(464,113)	79
12.2794	(71,516)	(9,832)	(23,198,721)	23,996	(464,007)	79
12.2794	(71,516)	(9,836)	(23,208,557)	23,998	(463,900)	79
12.2794	(71,516)	(9,840)	(23,218,397)	24,000	(463,793)	79
12.2794	(71,516)	(9,844)	(23,228,241)	24,002	(463,685)	79
12.2794	(71,516)	(9,848)	(23,238,089)	24,004	(463,578)	79
12.2794	(71,516)	(9,852)	(23,247,941)	24,006	(463,470)	79
12.2794	(71,516)	(9,856)	(23,257,797)	24,008	(463,363)	79
12.2794	(71,516)	(9,860)	(23,267,657)	24,010	(463,255)	79
12.2794	(71,516)	(9,864)	(23,277,521)	24,013	(463,147)	79
12.2794	(71,516)	(9,868)	(23,287,389)	24,015	(463,039)	79
12.2794	(71,516)	(9,872)	(23,297,261)	24,017	(462,931)	79
12.2794	(71,516)	(9,876)	(23,307,136)	24,019	(462,823)	79
12.2794	(71,516)	(9,880)	(23,317,016)	24,021	(462,714)	79
12.2794	(71,516)	(9,884)	(23,326,900)	24,023	(462,605)	79
12.2794	(71,516)	(9,888)	(23,336,788)	24,025	(462,497)	79
12.2794	(71,516)	(9,892)	(23,346,679)	24,027	(462,388)	79
12.2794	(71,516)	(9,896)	(23,356,575)	24,029	(462,279)	79
12.2794	(71,516)	(9,900)	(23,366,475)	24,032	(462,170)	79
12.2794	(71,516)	(9,904)	(23,376,379)	24,034	(462,060)	79
12.2794	(71,516)	(9,908)	(23,386,286)	24,036	(461,951)	79
12.2794	(71,516)	(9,912)	(23,396,198)	24,038	(461,841)	79
12.2794	(71,516)	(9,916)	(23,406,113)	24,040	(461,732)	79
12.2794	(71,516)	(9,920)	(23,416,033)	24,042	(461,622)	79
12.2794	(71,516)	(9,924)	(23,425,957)	24,044	(461,512)	79
12.2794	(71,516)	(9,928)	(23,435,884)	24,046	(461,402)	79
12.2794	(71,516)	(9,932)	(23,445,816)	24,048	(461,291)	79

12.2794	(71,516)	(9,936)	(23,455,752)	24,050	(461,181)	79
12.2794	(71,516)	(9,940)	(23,465,691)	24,052	(461,070)	79
12.2794	(71,516)	(9,944)	(23,475,635)	24,055	(460,960)	79
12.2794	(71,516)	(9,948)	(23,485,582)	24,057	(460,849)	79
12.2794	(71,516)	(9,952)	(23,495,534)	24,059	(460,738)	79
12.2794	(71,516)	(9,956)	(23,505,490)	24,061	(460,627)	79
12.2794	(71,516)	(9,960)	(23,515,449)	24,063	(460,515)	79
12.2794	(71,516)	(9,964)	(23,525,413)	24,065	(460,404)	79
12.2794	(71,516)	(9,968)	(23,535,381)	24,067	(460,292)	79
12.2794	(71,516)	(9,972)	(23,545,352)	24,069	(460,181)	79
12.2794	(71,516)	(9,976)	(23,555,328)	24,071	(460,069)	79
12.2794	(71,516)	(9,980)	(23,565,308)	24,073	(459,957)	79
12.2794	(71,516)	(9,984)	(23,575,291)	24,075	(459,845)	79
12.2794	(71,516)	(9,988)	(23,585,279)	24,077	(459,732)	79
12.2794	(71,516)	(9,992)	(23,595,271)	24,079	(459,620)	79
12.2794	(71,516)	(9,996)	(23,605,267)	24,081	(459,507)	79
12.2794	(71,516)	(10,000)	(23,615,266)	24,083	(459,395)	79
12.2794	(71,516)	(10,004)	(23,625,270)	24,085	(459,282)	79
12.2794	(71,516)	(10,008)	(23,635,278)	24,087	(459,169)	79
12.2794	(71,516)	(10,012)	(23,645,290)	24,089	(459,056)	79
12.2794	(71,516)	(10,016)	(23,655,306)	24,091	(458,943)	79
12.2794	(71,516)	(10,020)	(23,665,326)	24,093	(458,829)	79
12.2794	(71,516)	(10,024)	(23,675,350)	24,096	(458,716)	79
12.2794	(71,516)	(10,028)	(23,685,378)	24,098	(458,602)	79
12.2794	(71,516)	(10,032)	(23,695,410)	24,100	(458,488)	79
12.2794	(71,516)	(10,036)	(23,705,446)	24,102	(458,374)	79
12.2794	(71,516)	(10,040)	(23,715,486)	24,104	(458,260)	79
12.2794	(71,516)	(10,044)	(23,725,530)	24,106	(458,146)	79
12.2794	(71,516)	(10,048)	(23,735,578)	24,108	(458,031)	79
12.2794	(71,516)	(10,052)	(23,745,631)	24,110	(457,917)	79
12.2794	(71,516)	(10,056)	(23,755,687)	24,112	(457,802)	79
12.2794	(71,516)	(10,060)	(23,765,747)	24,114	(457,687)	79
12.2794	(71,516)	(10,064)	(23,775,812)	24,116	(457,572)	79
12.2794	(71,516)	(10,068)	(23,785,880)	24,118	(457,457)	79
12.2794	(71,516)	(10,072)	(23,795,952)	24,120	(457,342)	79
12.2794	(71,516)	(10,077)	(23,806,029)	24,122	(457,227)	79
12.2794	(71,516)	(10,081)	(23,816,110)	24,124	(457,111)	79
12.2794	(71,516)	(10,085)	(23,826,194)	24,126	(456,995)	79
12.2794	(71,516)	(10,089)	(23,836,283)	24,128	(456,879)	79
12.2794	(71,516)	(10,093)	(23,846,376)	24,130	(456,763)	79
12.2794	(71,516)	(10,097)	(23,856,472)	24,132	(456,647)	79
12.2794	(71,516)	(10,101)	(23,866,573)	24,134	(456,531)	79
12.2794	(71,516)	(10,105)	(23,876,678)	24,136	(456,415)	79
12.2794	(71,516)	(10,109)	(23,886,787)	24,137	(456,298)	79
12.2794	(71,516)	(10,113)	(23,896,900)	24,139	(456,181)	79
12.2794	(71,516)	(10,117)	(23,907,017)	24,141	(456,065)	79
12.2794	(71,516)	(10,121)	(23,917,139)	24,143	(455,948)	79
12.2794	(71,516)	(10,125)	(23,927,264)	24,145	(455,830)	79
12.2794	(71,516)	(10,129)	(23,937,393)	24,147	(455,713)	79
12.2794	(71,516)	(10,133)	(23,947,527)	24,149	(455,596)	79
12.2794	(71,516)	(10,138)	(23,957,664)	24,151	(455,478)	79
12.2794	(71,516)	(10,142)	(23,967,806)	24,153	(455,361)	79
12.2794	(71,516)	(10,146)	(23,977,952)	24,155	(455,243)	79
12.2794	(71,516)	(10,150)	(23,988,101)	24,157	(455,125)	79
12.2794	(71,516)	(10,154)	(23,998,255)	24,159	(455,007)	79
12.2794	(71,516)	(10,158)	(24,008,413)	24,161	(454,888)	79

12.2794	(71,516)	(10,162)	(24,018,575)	24,163	(454,770)	79
12.2794	(71,516)	(10,166)	(24,028,741)	24,165	(454,651)	79
12.2794	(71,516)	(10,170)	(24,038,911)	24,167	(454,532)	79
12.2794	(71,516)	(10,174)	(24,049,086)	24,169	(454,414)	79
12.2794	(71,516)	(10,178)	(24,059,264)	24,171	(454,295)	79
12.2794	(71,516)	(10,182)	(24,069,446)	24,173	(454,175)	79
12.2794	(71,516)	(10,187)	(24,079,633)	24,175	(454,056)	79
12.2794	(71,516)	(10,191)	(24,089,824)	24,176	(453,937)	79
12.2794	(71,516)	(10,195)	(24,100,018)	24,178	(453,817)	79
12.2794	(71,516)	(10,199)	(24,110,217)	24,180	(453,697)	79
12.2794	(71,516)	(10,203)	(24,120,420)	24,182	(453,577)	79
12.2794	(71,516)	(10,207)	(24,130,627)	24,184	(453,457)	80
12.2794	(71,516)	(10,211)	(24,140,838)	24,186	(453,337)	80
12.2794	(71,516)	(10,215)	(24,151,053)	24,188	(453,217)	80
12.2794	(71,516)	(10,219)	(24,161,273)	24,190	(453,096)	80
12.2794	(71,516)	(10,223)	(24,171,496)	24,192	(452,976)	80
12.2794	(71,516)	(10,228)	(24,181,724)	24,194	(452,855)	80
12.2794	(71,516)	(10,232)	(24,191,956)	24,196	(452,734)	80
12.2794	(71,516)	(10,236)	(24,202,191)	24,197	(452,613)	80
12.2794	(71,516)	(10,240)	(24,212,431)	24,199	(452,492)	80
12.2794	(71,516)	(10,244)	(24,222,675)	24,201	(452,370)	80
12.2794	(71,516)	(10,248)	(24,232,924)	24,203	(452,249)	80
12.2794	(71,516)	(10,252)	(24,243,176)	24,205	(452,127)	80
12.2794	(71,516)	(10,256)	(24,253,432)	24,207	(452,005)	80
12.2794	(71,516)	(10,261)	(24,263,693)	24,209	(451,883)	80
12.2794	(71,516)	(10,265)	(24,273,957)	24,211	(451,761)	80
12.2794	(71,516)	(10,269)	(24,284,226)	24,213	(451,639)	80
12.2794	(71,516)	(10,273)	(24,294,499)	24,214	(451,517)	80
12.2794	(71,516)	(10,277)	(24,304,776)	24,216	(451,394)	80
12.2794	(71,516)	(10,281)	(24,315,057)	24,218	(451,271)	80
12.2794	(71,516)	(10,285)	(24,325,343)	24,220	(451,149)	80
12.2794	(71,516)	(10,289)	(24,335,632)	24,222	(451,026)	80
12.2794	(71,516)	(10,294)	(24,345,926)	24,224	(450,902)	80
12.2794	(71,516)	(10,298)	(24,356,223)	24,226	(450,779)	80
12.2794	(71,516)	(10,302)	(24,366,525)	24,227	(450,656)	80
12.2794	(71,516)	(10,306)	(24,376,831)	24,229	(450,532)	80
12.2794	(71,516)	(10,310)	(24,387,141)	24,231	(450,408)	80
12.2794	(71,516)	(10,314)	(24,397,456)	24,233	(450,285)	80
12.2794	(71,516)	(10,318)	(24,407,774)	24,235	(450,161)	80
12.2794	(71,516)	(10,323)	(24,418,097)	24,237	(450,036)	80
12.2794	(71,516)	(10,327)	(24,428,424)	24,239	(449,912)	80
12.2794	(71,516)	(10,331)	(24,438,754)	24,240	(449,788)	80
12.2794	(71,516)	(10,335)	(24,449,089)	24,242	(449,663)	80
12.2794	(71,516)	(10,339)	(24,459,429)	24,244	(449,538)	80
12.2794	(71,516)	(10,343)	(24,469,772)	24,246	(449,413)	80
12.2794	(71,516)	(10,348)	(24,480,120)	24,248	(449,288)	80
12.2794	(71,516)	(10,352)	(24,490,471)	24,250	(449,163)	80
12.2794	(71,516)	(10,356)	(24,500,827)	24,251	(449,038)	80
12.2794	(71,516)	(10,360)	(24,511,187)	24,253	(448,912)	80
12.2794	(71,516)	(10,364)	(24,521,551)	24,255	(448,786)	80
12.2794	(71,516)	(10,368)	(24,531,920)	24,257	(448,661)	80
12.2794	(71,516)	(10,372)	(24,542,292)	24,259	(448,535)	80
12.2794	(71,516)	(10,377)	(24,552,669)	24,260	(448,408)	80
12.2794	(71,516)	(10,381)	(24,563,050)	24,262	(448,282)	80
12.2794	(71,516)	(10,385)	(24,573,435)	24,264	(448,156)	80
12.2794	(71,516)	(10,389)	(24,583,824)	24,266	(448,029)	80

12.2794	(71,516)	(10,393)	(24,594,217)	24,268	(447,902)	80
12.2794	(71,516)	(10,398)	(24,604,615)	24,269	(447,776)	80
12.2794	(71,516)	(10,402)	(24,615,016)	24,271	(447,649)	80
12.2794	(71,516)	(10,406)	(24,625,422)	24,273	(447,521)	80
12.2794	(71,516)	(10,410)	(24,635,832)	24,275	(447,394)	80
12.2794	(71,516)	(10,414)	(24,646,247)	24,277	(447,267)	80
12.2794	(71,516)	(10,418)	(24,656,665)	24,278	(447,139)	80
12.2794	(71,516)	(10,423)	(24,667,088)	24,280	(447,011)	80
12.2794	(71,516)	(17,840)	(11,669,061)	554	(13,771)	47
12.4591	(67,403)	(3,865)	(11,672,925)	551	(13,721)	103
12.4591	(67,403)	(3,866)	(11,676,791)	548	(13,671)	103
12.4591	(67,403)	(3,867)	(11,680,659)	545	(13,622)	103
12.4591	(67,403)	(3,869)	(11,684,527)	542	(13,572)	103
12.4591	(67,403)	(3,870)	(11,688,397)	540	(13,522)	103
12.4591	(67,403)	(3,871)	(11,692,268)	537	(13,472)	103
12.4591	(67,403)	(3,872)	(11,696,140)	534	(13,423)	103
12.4591	(67,403)	(3,874)	(11,700,014)	531	(13,373)	103
12.4591	(67,403)	(3,875)	(11,703,889)	528	(13,323)	103
12.4591	(67,403)	(3,876)	(11,707,765)	525	(13,273)	103
12.4591	(67,403)	(3,877)	(11,711,643)	523	(13,223)	103
12.4591	(67,403)	(3,879)	(11,715,521)	520	(13,173)	103
12.4591	(67,403)	(3,880)	(11,719,401)	517	(13,123)	103
12.4591	(67,403)	(3,881)	(11,723,283)	514	(13,073)	103
12.4591	(67,403)	(3,883)	(11,727,165)	511	(13,023)	103
12.4591	(67,403)	(3,884)	(11,731,049)	508	(12,973)	103
12.4591	(67,403)	(3,885)	(11,734,935)	505	(12,923)	103
12.4591	(67,403)	(3,886)	(11,738,821)	503	(12,872)	103
12.4591	(67,403)	(3,888)	(11,742,709)	500	(12,822)	103
12.4591	(67,403)	(3,889)	(11,746,598)	497	(12,772)	103
12.4591	(67,403)	(3,890)	(11,750,488)	494	(12,722)	103
12.4591	(67,403)	(3,892)	(11,754,380)	491	(12,671)	103
12.4591	(67,403)	(3,893)	(11,758,273)	488	(12,621)	103
12.4591	(67,403)	(3,894)	(11,762,167)	485	(12,571)	103
12.4591	(67,403)	(3,896)	(11,766,062)	483	(12,520)	103
12.4591	(67,403)	(3,897)	(11,769,959)	480	(12,470)	103
12.4591	(67,403)	(3,898)	(11,773,857)	477	(12,419)	103
12.4591	(67,403)	(3,899)	(11,777,757)	474	(12,369)	103
12.4591	(67,403)	(3,901)	(11,781,657)	471	(12,318)	103
12.4591	(67,403)	(3,902)	(11,785,559)	468	(12,267)	103
12.4591	(67,403)	(3,903)	(11,789,463)	465	(12,217)	103
12.4591	(67,403)	(3,905)	(11,793,367)	462	(12,166)	103
12.4591	(67,403)	(3,906)	(11,797,273)	459	(12,115)	103
12.4591	(67,403)	(3,907)	(11,801,180)	457	(12,065)	103
12.4591	(67,403)	(3,908)	(11,805,089)	454	(12,014)	103
12.4591	(67,403)	(3,910)	(11,808,998)	451	(11,963)	103
12.4591	(67,403)	(3,911)	(11,812,909)	448	(11,912)	103
12.4591	(67,403)	(3,912)	(11,816,822)	445	(11,861)	103
12.4591	(67,403)	(3,914)	(11,820,735)	442	(11,810)	103
12.4591	(67,403)	(3,915)	(11,824,650)	439	(11,759)	103
12.4591	(67,403)	(3,916)	(11,828,566)	436	(11,708)	103
12.4591	(67,403)	(3,917)	(11,832,484)	433	(11,657)	103
12.4591	(67,403)	(3,919)	(11,836,403)	430	(11,606)	103
12.4591	(67,403)	(3,920)	(11,840,323)	428	(11,555)	103
12.4591	(67,403)	(3,921)	(11,844,244)	425	(11,504)	103
12.4591	(67,403)	(3,923)	(11,848,167)	422	(11,453)	103
12.4591	(67,403)	(3,924)	(11,852,091)	419	(11,402)	103

12.4591	(67,403)	(3,925)	(11,856,016)	416	(11,351)	103
12.4591	(67,403)	(3,927)	(11,859,943)	413	(11,299)	103
12.4591	(67,403)	(3,928)	(11,863,870)	410	(11,248)	103
12.4591	(67,403)	(3,929)	(11,867,800)	407	(11,197)	103
12.4591	(67,403)	(3,930)	(11,871,730)	404	(11,145)	103
12.4591	(67,403)	(3,932)	(11,875,662)	401	(11,094)	103
12.4591	(67,403)	(3,933)	(11,879,595)	398	(11,042)	103
12.4591	(67,403)	(3,934)	(11,883,529)	395	(10,991)	103
12.4591	(67,403)	(3,936)	(11,887,465)	392	(10,939)	103
12.4591	(67,403)	(3,937)	(11,891,402)	390	(10,888)	103
12.4591	(67,403)	(3,938)	(11,895,340)	387	(10,836)	103
12.4591	(67,403)	(3,940)	(11,899,280)	384	(10,785)	103
12.4591	(67,403)	(3,941)	(11,903,221)	381	(10,733)	103
12.4591	(67,403)	(3,942)	(11,907,163)	378	(10,681)	103
12.4591	(67,403)	(3,944)	(11,911,107)	375	(10,630)	103
12.4591	(67,403)	(3,945)	(11,915,052)	372	(10,578)	103
12.4591	(67,403)	(3,946)	(11,918,998)	369	(10,526)	103
12.4591	(67,403)	(3,947)	(11,922,945)	366	(10,474)	103
12.4591	(67,403)	(3,949)	(11,926,894)	363	(10,422)	103
12.4591	(67,403)	(3,950)	(11,930,844)	360	(10,370)	103
12.4591	(67,403)	(3,951)	(11,934,795)	357	(10,319)	103
12.4591	(67,403)	(3,953)	(11,938,748)	354	(10,267)	103
12.4591	(67,403)	(3,954)	(11,942,702)	351	(10,215)	103
12.4591	(67,403)	(3,955)	(11,946,657)	348	(10,162)	103
12.4591	(67,403)	(3,957)	(11,950,614)	345	(10,110)	103
12.4591	(67,403)	(3,958)	(11,954,572)	342	(10,058)	103
12.4591	(67,403)	(3,959)	(11,958,531)	339	(10,006)	103
12.4591	(67,403)	(3,961)	(11,962,492)	336	(9,954)	103
12.4591	(67,403)	(3,962)	(11,966,453)	333	(9,902)	103
12.4591	(67,403)	(3,963)	(11,970,417)	330	(9,849)	103
12.4591	(67,403)	(3,964)	(11,974,381)	327	(9,797)	103
12.4591	(67,403)	(3,966)	(11,978,347)	324	(9,745)	103
12.4591	(67,403)	(3,967)	(11,982,314)	321	(9,693)	103
12.4591	(67,403)	(3,968)	(11,986,282)	318	(9,640)	103
12.4591	(67,403)	(3,970)	(11,990,252)	315	(9,588)	103
12.4591	(67,403)	(3,971)	(11,994,223)	312	(9,535)	103
12.4591	(67,403)	(3,972)	(11,998,195)	309	(9,483)	103
12.4591	(67,403)	(3,974)	(12,002,169)	306	(9,430)	103
12.4591	(67,403)	(3,975)	(12,006,144)	303	(9,378)	103
12.4591	(67,403)	(3,976)	(12,010,120)	300	(9,325)	103
12.4591	(67,403)	(3,978)	(12,014,098)	297	(9,272)	103
12.4591	(67,403)	(3,979)	(12,018,077)	294	(9,220)	103
12.4591	(67,403)	(3,980)	(12,022,057)	291	(9,167)	103
12.4591	(67,403)	(3,982)	(12,026,039)	288	(9,114)	103
12.4591	(67,403)	(3,983)	(12,030,022)	285	(9,061)	103
12.4591	(67,403)	(3,984)	(12,034,006)	282	(9,009)	103
12.4591	(67,403)	(3,986)	(12,037,992)	279	(8,956)	103
12.4591	(67,403)	(3,987)	(12,041,978)	276	(8,903)	103
12.4591	(67,403)	(3,988)	(12,045,967)	273	(8,850)	103
12.4591	(67,403)	(3,989)	(12,049,956)	270	(8,797)	103
12.4591	(67,403)	(3,991)	(12,053,947)	267	(8,744)	103
12.4591	(67,403)	(3,992)	(12,057,939)	264	(8,691)	103
12.4591	(67,403)	(3,993)	(12,061,932)	261	(8,638)	103
12.4591	(67,403)	(3,995)	(12,065,927)	258	(8,585)	103
12.4591	(67,403)	(3,996)	(12,069,923)	255	(8,532)	103
12.4591	(67,403)	(3,997)	(12,073,921)	252	(8,478)	103

12.4591	(67,403)	(3,999)	(12,077,920)	249	(8,425)	103
12.4591	(67,403)	(4,000)	(12,081,920)	246	(8,372)	103
12.4591	(67,403)	(4,001)	(12,085,921)	243	(8,319)	103
12.4591	(67,403)	(4,003)	(12,089,924)	240	(8,265)	103
12.4591	(67,403)	(4,004)	(12,093,928)	237	(8,212)	103
12.4591	(67,403)	(4,005)	(12,097,933)	234	(8,159)	103
12.4591	(67,403)	(4,007)	(12,101,940)	231	(8,105)	103
12.4591	(67,403)	(4,008)	(12,105,948)	228	(8,052)	103
12.4591	(67,403)	(4,009)	(12,109,957)	225	(7,998)	103
12.4591	(67,403)	(4,011)	(12,113,968)	222	(7,945)	103
12.4591	(67,403)	(4,012)	(12,117,980)	219	(7,891)	103
12.4591	(67,403)	(4,013)	(12,121,993)	216	(7,837)	103
12.4591	(67,403)	(4,015)	(12,126,008)	213	(7,784)	103
12.4591	(67,403)	(4,016)	(12,130,024)	210	(7,730)	103
12.4591	(67,403)	(4,017)	(12,134,041)	207	(7,676)	103
12.4591	(67,403)	(4,019)	(12,138,060)	203	(7,623)	103
12.4591	(67,403)	(4,020)	(12,142,080)	200	(7,569)	103
12.4591	(67,403)	(4,021)	(12,146,101)	197	(7,515)	103
12.4591	(67,403)	(4,023)	(12,150,124)	194	(7,461)	103
12.4591	(67,403)	(4,024)	(12,154,148)	191	(7,407)	103
12.4591	(67,403)	(4,025)	(12,158,173)	188	(7,353)	103
12.4591	(67,403)	(4,027)	(12,162,200)	185	(7,299)	103
12.4591	(67,403)	(4,028)	(12,166,228)	182	(7,245)	103
12.4591	(67,403)	(4,029)	(12,170,257)	179	(7,191)	103
12.4591	(67,403)	(4,031)	(12,174,288)	176	(7,137)	103
12.4591	(67,403)	(4,032)	(12,178,320)	173	(7,083)	103
12.4591	(67,403)	(4,033)	(12,182,353)	170	(7,029)	103
12.4591	(67,403)	(4,035)	(12,186,388)	167	(6,975)	103
12.4591	(67,403)	(4,036)	(12,190,424)	163	(6,920)	103
12.4591	(67,403)	(4,037)	(12,194,461)	160	(6,866)	103
12.4591	(67,403)	(4,039)	(12,198,500)	157	(6,812)	103
12.4591	(67,403)	(4,040)	(12,202,540)	154	(6,758)	103
12.4591	(67,403)	(4,041)	(12,206,581)	151	(6,703)	103
12.4591	(67,403)	(4,043)	(12,210,624)	148	(6,649)	103
12.4591	(67,403)	(4,044)	(12,214,668)	145	(6,594)	103
12.4591	(67,403)	(4,045)	(12,218,713)	142	(6,540)	103
12.4591	(67,403)	(4,047)	(12,222,760)	139	(6,485)	103
12.4591	(67,403)	(4,048)	(12,226,808)	136	(6,431)	103
12.4591	(67,403)	(4,049)	(12,230,858)	132	(6,376)	103
12.4591	(67,403)	(4,051)	(12,234,908)	129	(6,322)	103
12.4591	(67,403)	(4,052)	(12,238,960)	126	(6,267)	103
12.4591	(67,403)	(4,053)	(12,243,014)	123	(6,212)	103
12.4591	(67,403)	(4,055)	(12,247,068)	120	(6,157)	103
12.4591	(67,403)	(4,056)	(12,251,125)	117	(6,103)	103
12.4591	(67,403)	(4,057)	(12,255,182)	114	(6,048)	103
12.4591	(67,403)	(4,059)	(12,259,241)	111	(5,993)	103
12.4591	(67,403)	(4,060)	(12,263,301)	108	(5,938)	103
12.4591	(67,403)	(4,061)	(12,267,362)	104	(5,883)	103
12.4591	(67,403)	(4,063)	(12,271,425)	101	(5,828)	103
12.4591	(67,403)	(4,064)	(12,275,489)	98	(5,773)	103
12.4591	(67,403)	(4,066)	(12,279,555)	95	(5,718)	103
12.4591	(67,403)	(4,067)	(12,283,622)	92	(5,663)	103
12.4591	(67,403)	(4,068)	(12,287,690)	89	(5,608)	103
12.4591	(67,403)	(4,070)	(12,291,760)	86	(5,553)	103
12.4591	(67,403)	(4,071)	(12,295,830)	82	(5,498)	103
12.4591	(67,403)	(4,072)	(12,299,903)	79	(5,442)	103

12.4591	(67,403)	(4,074)	(12,303,976)	76	(5,387)	103
12.4591	(67,403)	(4,075)	(12,308,051)	73	(5,332)	103
12.4591	(67,403)	(4,076)	(12,312,128)	70	(5,277)	103
12.4591	(67,403)	(4,078)	(12,316,205)	67	(5,221)	103
12.4591	(67,403)	(4,079)	(12,320,284)	64	(5,166)	103
12.4591	(67,403)	(4,080)	(12,324,365)	60	(5,110)	103
12.4591	(67,403)	(4,082)	(12,328,446)	57	(5,055)	103
12.4591	(67,403)	(4,083)	(12,332,529)	54	(4,999)	103
12.4591	(67,403)	(4,084)	(12,336,614)	51	(4,944)	103
12.4591	(67,403)	(4,086)	(12,340,699)	48	(4,888)	103
12.4591	(67,403)	(4,087)	(12,344,787)	45	(4,833)	103
12.4591	(67,403)	(4,088)	(12,348,875)	41	(4,777)	103
12.4591	(67,403)	(4,090)	(12,352,965)	38	(4,721)	103
12.4591	(67,403)	(4,091)	(12,357,056)	35	(4,666)	103
12.4591	(67,403)	(4,093)	(12,361,149)	32	(4,610)	103
12.4591	(67,403)	(4,094)	(12,365,242)	29	(4,554)	103
12.4591	(67,403)	(4,095)	(12,369,338)	26	(4,498)	103
12.4591	(67,403)	(4,097)	(12,373,434)	22	(4,442)	103
12.4591	(67,403)	(4,098)	(12,377,532)	19	(4,386)	103
12.4591	(67,403)	(4,099)	(12,381,631)	16	(4,330)	103
12.4591	(67,403)	(4,101)	(12,385,732)	13	(4,274)	103
12.4591	(67,403)	(4,102)	(12,389,834)	10	(4,218)	103
12.4591	(67,403)	(4,103)	(12,393,938)	6	(4,162)	103
12.4591	(67,403)	(4,105)	(12,398,042)	3	(4,106)	103
12.4591	(67,403)	(4,106)	0	0	0	103
ET $'000	(12,261)	(12,261)				

TABLE 4.3 '(D)

Summary of Portfolio Daily Results

r t (%)	St. Line Accruals $	Mark to Market $	V t $	Portfolio Delta $	Portfolio Theta $	r V t t-1 Income (%)
6.8194	0	0	0	(3,080)	4,892,666	0
6.5000	18,321	72,631,218	72,631,218	(1,871)	(305,112,474)	0
6.5000	18,321	(82,172)	72,549,047	(1,839)	(305,067,668)	(16)
6.5000	18,321	(82,518)	72,466,529	(1,806)	(305,022,508)	(16)
6.5000	18,321	(82,865)	72,383,664	(1,774)	(304,976,993)	(16)
6.5000	18,321	(83,214)	72,300,450	(1,742)	(304,931,123)	(15)
6.5000	18,321	(83,564)	72,216,886	(1,710)	(304,884,894)	(15)
6.5000	18,321	(83,915)	72,132,972	(1,678)	(304,838,307)	(15)
6.5000	18,321	(84,267)	72,048,705	(1,645)	(304,791,360)	(15)
6.5000	18,321	(84,621)	71,964,084	(1,613)	(304,744,052)	(15)
6.5000	18,321	(84,975)	71,879,109	(1,581)	(304,696,381)	(15)
6.5000	18,321	(85,331)	71,793,777	(1,549)	(304,648,346)	(15)
6.5000	18,321	(85,689)	71,708,088	(1,516)	(304,599,946)	(15)
6.5000	18,321	(86,047)	71,622,041	(1,484)	(304,551,179)	(15)
6.5000	18,321	(86,407)	71,535,634	(1,452)	(304,502,045)	(15)
6.5000	18,321	(86,768)	71,448,866	(1,419)	(304,452,541)	(15)
6.5000	18,321	(87,130)	71,361,736	(1,387)	(304,402,666)	(15)
6.5000	18,321	(87,494)	71,274,241	(1,355)	(304,352,420)	(15)
6.5000	18,321	(87,859)	71,186,382	(1,322)	(304,301,800)	(14)
6.5000	18,321	(88,225)	71,098,157	(1,290)	(304,250,806)	(14)
6.5000	18,321	(88,593)	71,009,565	(1,258)	(304,199,436)	(14)
6.5000	18,321	(88,961)	70,920,603	(1,225)	(304,147,689)	(14)
6.5000	18,321	(89,332)	70,831,272	(1,193)	(304,095,562)	(14)
6.5000	18,321	(89,703)	70,741,569	(1,160)	(304,043,056)	(14)
6.5000	18,321	(90,076)	70,651,493	(1,128)	(303,990,169)	(14)
6.5000	18,321	(90,450)	70,561,044	(1,095)	(303,936,898)	(14)
6.5000	18,321	(90,825)	70,470,219	(1,063)	(303,883,244)	(14)
6.5000	18,321	(91,201)	70,379,017	(1,030)	(303,829,204)	(14)
6.5000	18,321	(91,579)	70,287,438	(998)	(303,774,777)	(14)
6.5000	18,321	(91,959)	70,195,479	(965)	(303,719,962)	(14)
6.5000	18,321	(92,339)	70,103,140	(933)	(303,664,757)	(14)
6.5000	18,321	(92,721)	70,010,419	(900)	(303,609,161)	(13)
6.5000	18,321	(93,104)	69,917,314	(867)	(303,553,172)	(13)
6.5000	18,321	(93,489)	69,823,825	(835)	(303,496,789)	(13)
6.5000	18,321	(93,875)	69,729,950	(802)	(303,440,011)	(13)
6.5000	18,321	(94,262)	69,635,688	(770)	(303,382,836)	(13)
6.5000	18,321	(94,651)	69,541,037	(737)	(303,325,263)	(13)
6.5000	18,321	(95,041)	69,445,995	(704)	(303,267,291)	(13)
6.5000	18,321	(95,433)	69,350,563	(672)	(303,208,917)	(13)
6.5000	18,321	(95,825)	69,254,737	(639)	(303,150,141)	(13)
6.5000	18,321	(96,220)	69,158,518	(606)	(303,090,960)	(13)
6.5000	18,321	(96,615)	69,061,902	(573)	(303,031,374)	(13)

6.5000	18,321	(97,012)	68,964,890	(541)(302,971,382)	(13)
6.5000	18,321	(97,411)	68,867,479	(508)(302,910,980)	(13)
6.5000	18,321	(97,810)	68,769,669	(475)(302,850,169)	(13)
6.5000	18,321	(98,212)	68,671,457	(442)(302,788,947)	(12)
6.5000	18,321	(98,614)	68,572,843	(410)(302,727,312)	(12)
6.5000	18,321	(99,018)	68,473,825	(377)(302,665,263)	(12)
6.5000	18,321	(99,424)	68,374,402	(344)(302,602,797)	(12)
6.5000	18,321	(99,830)	68,274,571	(311)(302,539,915)	(12)
6.5000	18,321	(100,239)	68,174,333	(278)(302,476,614)	(12)
6.5000	18,321	(100,648)	68,073,684	(245)(302,412,892)	(12)
6.5000	18,321	(101,060)	67,972,625	(213)(302,348,749)	(12)
6.5000	18,321	(101,472)	67,871,152	(180)(302,284,182)	(12)
6.5000	18,321	(101,886)	67,769,266	(147)(302,219,190)	(12)
6.5000	18,321	(102,302)	67,666,965	(114)(302,153,772)	(12)
6.5000	18,321	(102,719)	67,564,246	(81)(302,087,927)	(12)
6.5000	18,321	(103,137)	67,461,109	(48)(302,021,651)	(12)
6.5000	18,321	(103,557)	67,357,552	(15)(301,954,945)	(12)
6.5000	18,321	(103,978)	67,253,574	18 (301,887,806)	(12)
6.5000	18,321	(104,401)	67,149,173	51 (301,820,233)	(11)
6.5000	18,321	(104,825)	67,044,347	84 (301,752,225)	(11)
6.5000	18,321	(105,251)	66,939,096	117 (301,683,779)	(11)
6.5000	18,321	(105,679)	66,833,417	150 (301,614,894)	(11)
6.5000	18,321	(106,107)	66,727,310	183 (301,545,569)	(11)
6.5000	18,321	(106,538)	66,620,772	216 (301,475,802)	(11)
6.5000	18,321	(106,970)	66,513,802	249 (301,405,592)	(11)
6.5000	18,321	(107,403)	66,406,399	282 (301,334,936)	(11)
6.5000	18,321	(107,838)	66,298,561	316 (301,263,834)	(11)
6.5000	18,321	(108,274)	66,190,287	349 (301,192,283)	(11)
6.5000	18,321	(108,712)	66,081,575	382 (301,120,282)	(11)
6.5000	18,321	(109,152)	65,972,423	415 (301,047,830)	(11)
6.5000	18,321	(109,593)	65,862,831	448 (300,974,924)	(11)
6.5000	18,321	(110,035)	65,752,795	481 (300,901,564)	(11)
6.5000	18,321	(110,479)	65,642,316	514 (300,827,747)	(11)
6.5000	18,321	(110,925)	65,531,391	548 (300,753,472)	(11)
6.5000	18,321	(111,372)	65,420,019	581 (300,678,738)	(10)
6.5000	18,321	(111,821)	65,308,197	614 (300,603,542)	(10)
6.5000	18,321	(112,272)	65,195,926	647 (300,527,883)	(10)
6.5000	18,321	(112,723)	65,083,202	681 (300,451,759)	(10)
6.5000	18,321	(113,177)	64,970,025	714 (300,375,168)	(10)
6.5000	18,321	(113,632)	64,856,393	747 (300,298,110)	(10)
6.5000	18,321	(114,089)	64,742,304	780 (300,220,582)	(10)
6.5000	18,321	(114,547)	64,627,757	814 (300,142,583)	(10)
6.5000	18,321	(115,007)	64,512,750	847 (300,064,110)	(10)
6.5000	18,321	(115,469)	64,397,281	880 (299,985,163)	(10)
6.5000	18,321	(115,932)	64,281,349	914 (299,905,739)	(10)
6.5000	18,321	(116,397)	64,164,952	947 (299,825,837)	(10)
6.5000	18,321	(116,863)	64,048,089	980 (299,745,454)	(10)
6.5000	18,321	(117,331)	63,930,757	1,014 (299,664,591)	(10)
6.5000	18,321	(117,801)	63,812,956	1,047 (299,583,243)	(10)
6.5000	18,321	(118,272)	63,694,684	1,081 (299,501,411)	(10)
6.5000	18,321	(118,746)	63,575,938	1,114 (299,419,092)	(10)
6.5000	18,321	(119,220)	63,456,718	1,147 (299,336,284)	(9)
6.5000	18,321	(119,697)	63,337,022	1,181 (299,252,986)	(9)
6.5000	18,321	(120,175)	63,216,847	1,214 (299,169,195)	(9)
6.5000	18,321	(120,654)	63,096,193	1,248 (299,084,911)	(9)
6.5000	18,321	(121,136)	62,975,057	1,281 (299,000,131)	(9)

6.5000	18,321	(121,619)	62,853,438	1,315	(298,914,854)	(9)
6.5000	18,321	(122,104)	62,731,334	1,348	(298,829,077)	(9)
6.5000	18,321	(122,590)	62,608,744	1,382	(298,742,799)	(9)
6.5000	18,321	(123,078)	62,485,666	1,415	(298,656,019)	(9)
6.5000	18,321	(123,568)	62,362,098	1,449	(298,568,733)	(9)
6.5000	18,321	(124,060)	62,238,038	1,482	(298,480,942)	(9)
6.5000	18,321	(124,553)	62,113,485	1,516	(298,392,642)	(9)
6.5000	18,321	(125,048)	61,988,437	1,549	(298,303,832)	(9)
6.5000	18,321	(125,545)	61,862,892	1,583	(298,214,510)	(9)
6.5000	18,321	(126,044)	61,736,848	1,617	(298,124,675)	(9)
6.5000	18,321	(126,544)	61,610,305	1,650	(298,034,324)	(9)
6.5000	18,321	(127,046)	61,483,259	1,684	(297,943,455)	(9)
6.5000	18,321	(127,550)	61,355,709	1,717	(297,852,067)	(9)
6.5000	18,321	(128,055)	61,227,654	1,751	(297,760,158)	(9)
6.5000	18,321	(128,563)	61,099,091	1,785	(297,667,726)	(8)
6.5000	18,321	(129,072)	60,970,019	1,818	(297,574,769)	(8)
6.5000	18,321	(129,583)	60,840,437	1,852	(297,481,286)	(8)
6.5000	18,321	(130,095)	60,710,341	1,886	(297,387,273)	(8)
6.5000	18,321	(130,610)	60,579,731	1,919	(297,292,730)	(8)
6.5000	18,321	(131,126)	60,448,605	1,953	(297,197,655)	(8)
6.5000	18,321	(131,644)	60,316,961	1,987	(297,102,045)	(8)
6.5000	18,321	(132,164)	60,184,796	2,021	(297,005,899)	(8)
6.5000	18,321	(132,686)	60,052,110	2,054	(296,909,215)	(8)
6.5000	18,321	(133,210)	59,918,900	2,088	(296,811,991)	(8)
6.5000	18,321	(133,735)	59,785,165	2,122	(296,714,225)	(8)
6.5000	18,321	(134,262)	59,650,903	2,156	(296,615,914)	(8)
6.5000	18,321	(134,792)	59,516,111	2,189	(296,517,058)	(8)
6.5000	18,321	(135,322)	59,380,789	2,223	(296,417,654)	(8)
6.5000	18,321	(135,855)	59,244,934	2,257	(296,317,700)	(8)
6.5000	18,321	(136,390)	59,108,544	2,291	(296,217,194)	(8)
6.5000	18,321	(136,927)	58,971,617	2,324	(296,116,135)	(8)
6.5000	18,321	(137,465)	58,834,152	2,358	(296,014,519)	(8)
6.5000	18,321	(138,005)	58,696,146	2,392	(295,912,346)	(8)
6.5000	18,321	(138,548)	58,557,599	2,426	(295,809,613)	(8)
6.5000	18,321	(139,092)	58,418,507	2,460	(295,706,318)	(7)
6.5000	18,321	(139,638)	58,278,869	2,494	(295,602,460)	(7)
6.5000	18,321	(140,186)	58,138,683	2,528	(295,498,036)	(7)
6.5000	18,321	(140,736)	57,997,947	2,561	(295,393,044)	(7)
6.5000	18,321	(141,288)	57,856,660	2,595	(295,287,482)	(7)
6.5000	18,321	(141,841)	57,714,819	2,629	(295,181,348)	(7)
6.5000	18,321	(142,397)	57,572,422	2,663	(295,074,640)	(7)
6.5000	18,321	(142,955)	57,429,467	2,697	(294,967,356)	(7)
6.5000	18,321	(143,514)	57,285,953	2,731	(294,859,494)	(7)
6.5000	18,321	(144,076)	57,141,877	2,765	(294,751,052)	(7)
6.5000	18,321	(144,639)	56,997,238	2,799	(294,642,028)	(7)
6.5000	18,321	(145,205)	56,852,033	2,833	(294,532,420)	(7)
6.5000	18,321	(145,772)	56,706,260	2,867	(294,422,225)	(7)
6.5000	18,321	(146,342)	56,559,919	2,901	(294,311,442)	(7)
6.5000	18,321	(146,913)	56,413,005	2,935	(294,200,068)	(7)
6.5000	18,321	(147,487)	56,265,519	2,969	(294,088,102)	(7)
6.5000	18,321	(148,062)	56,117,457	3,003	(293,975,540)	(7)
6.5000	18,321	(148,640)	55,968,817	3,037	(293,862,382)	(7)
6.5000	18,321	(149,219)	55,819,598	3,071	(293,748,625)	(7)
6.5000	18,321	(149,801)	55,669,797	3,105	(293,634,266)	(7)
6.5000	18,321	(150,384)	55,519,413	3,139	(293,519,304)	(7)
6.5000	18,321	(150,970)	55,368,443	3,173	(293,403,737)	(7)

6.5000	18,321	(151,558)	55,216,885	3,207	(293,287,562)	(7)
6.5000	18,321	(152,147)	55,064,738	3,241	(293,170,777)	(6)
6.5000	18,321	(152,739)	54,911,999	3,275	(293,053,380)	(6)
6.5000	18,321	(153,333)	54,758,666	3,309	(292,935,369)	(6)
6.5000	18,321	(153,929)	54,604,737	3,343	(292,816,742)	(6)
6.5000	18,321	(154,527)	54,450,210	3,377	(292,697,496)	(6)
6.5000	18,321	(155,127)	54,295,083	3,411	(292,577,629)	(6)
6.5000	18,321	(155,729)	54,139,353	3,445	(292,457,139)	(6)
6.5000	18,321	(156,334)	53,983,019	3,479	(292,336,024)	(6)
6.5000	18,321	(156,940)	53,826,079	3,513	(292,214,281)	(6)
6.5000	18,321	(157,549)	53,668,530	3,547	(292,091,909)	(6)
6.5000	18,321	(158,160)	53,510,371	3,582	(291,968,904)	(6)
6.5000	18,321	(158,772)	53,351,598	3,616	(291,845,265)	(6)
6.5000	18,321	(159,387)	53,192,211	3,650	(291,720,990)	(6)
6.5000	18,321	(160,005)	53,032,206	3,684	(291,596,076)	(6)
6.5000	18,321	(160,624)	52,871,582	3,718	(291,470,521)	(6)
6.5000	18,321	(161,245)	52,710,337	3,752	(291,344,323)	(6)
6.5000	18,321	(161,869)	52,548,468	3,786	(291,217,479)	(6)
6.5000	18,321	(162,495)	52,385,973	3,821	(291,089,987)	(6)
6.5000	18,321	(163,123)	52,222,850	3,855	(290,961,845)	(6)
6.5000	18,321	(163,753)	52,059,097	3,889	(290,833,050)	(6)
6.5000	18,321	(164,386)	51,894,711	3,923	(290,703,600)	(6)
6.5000	18,321	(165,020)	51,729,691	3,957	(290,573,493)	(6)
6.5000	18,321	(165,657)	51,564,034	3,991	(290,442,727)	(6)
6.5000	18,321	(166,296)	51,397,737	4,026	(290,311,298)	(6)
6.5000	18,321	(166,938)	51,230,800	4,060	(290,179,205)	(5)
6.5000	18,321	(167,581)	51,063,219	4,094	(290,046,446)	(5)
6.5000	18,321	(168,652)	47,578,377	(818)	(289,913,599)	(5)
6.5000	17,435	(169,457)	47,408,921	(785)	(289,779,499)	(5)
6.5000	17,435	(170,107)	47,238,814	(753)	(289,644,725)	(5)
6.5000	17,435	(170,760)	47,068,054	(721)	(289,509,275)	(5)
6.5000	17,435	(171,415)	46,896,639	(688)	(289,373,146)	(5)
6.5000	17,435	(172,072)	46,724,567	(656)	(289,236,336)	(5)
6.5000	17,435	(172,732)	46,551,835	(623)	(289,098,843)	(5)
6.5000	17,435	(173,394)	46,378,442	(591)	(288,960,663)	(5)
6.5000	17,435	(174,058)	46,204,384	(558)	(288,821,796)	(5)
6.5000	17,435	(174,725)	46,029,659	(526)	(288,682,237)	(5)
6.5000	17,435	(175,394)	45,854,265	(493)	(288,541,985)	(5)
6.5000	17,435	(176,065)	45,678,201	(461)	(288,401,037)	(5)
6.5000	17,435	(176,738)	45,501,462	(428)	(288,259,391)	(5)
6.5000	17,435	(177,414)	45,324,048	(396)	(288,117,045)	(5)
6.5000	17,435	(178,093)	45,145,955	(363)	(287,973,995)	(5)
6.5000	17,435	(178,773)	44,967,182	(331)	(287,830,239)	(4)
6.5000	17,435	(179,457)	44,787,725	(298)	(287,685,775)	(4)
6.5000	17,435	(180,142)	44,607,583	(266)	(287,540,600)	(4)
6.5000	17,435	(180,830)	44,426,753	(233)	(287,394,711)	(4)
6.5000	17,435	(181,520)	44,245,233	(201)	(287,248,107)	(4)
6.5000	17,435	(182,213)	44,063,020	(168)	(287,100,785)	(4)
6.5000	17,435	(182,908)	43,880,112	(136)	(286,952,741)	(4)
6.5000	17,435	(183,606)	43,696,507	(103)	(286,803,974)	(4)
6.5000	17,435	(184,306)	43,512,201	(70)	(286,654,480)	(4)
6.5000	17,435	(185,008)	43,327,193	(38)	(286,504,258)	(4)
6.5000	17,435	(185,713)	43,141,480	(5)	(286,353,305)	(4)
6.5000	17,435	(186,420)	42,955,060	27	(286,201,617)	(4)
6.5000	17,435	(187,130)	42,767,930	60	(286,049,193)	(4)
6.5000	17,435	(187,842)	42,580,088	92	(285,896,030)	(4)

6.5000	17,435	(188,557)	42,391,530	125	(285,742,125)	(4)
6.5000	17,435	(189,275)	42,202,256	157	(285,587,475)	(4)
6.5000	17,435	(189,994)	42,012,261	190	(285,432,079)	(4)
6.5000	17,435	(190,717)	41,821,545	222	(285,275,932)	(4)
6.5000	17,435	(191,442)	41,630,103	255	(285,119,033)	(4)
6.5000	17,435	(192,169)	41,437,934	287	(284,961,379)	(4)
6.5000	17,435	(192,899)	41,245,035	320	(284,802,967)	(4)
6.5000	17,435	(193,631)	41,051,404	352	(284,643,795)	(4)
6.5000	17,435	(194,367)	40,857,037	385	(284,483,859)	(4)
6.5000	17,435	(195,104)	40,661,933	418	(284,323,158)	(4)
6.5000	17,435	(195,844)	40,466,088	450	(284,161,687)	(4)
6.5000	17,435	(196,587)	40,269,501	483	(283,999,445)	(4)
6.5000	17,435	(197,333)	40,072,169	515	(283,836,430)	(4)
6.5000	17,435	(198,081)	39,874,088	548	(283,672,637)	(4)
6.5000	17,435	(198,831)	39,675,257	580	(283,508,064)	(4)
6.5000	17,435	(199,584)	39,475,672	613	(283,342,709)	(4)
6.5000	17,435	(200,340)	39,275,332	645	(283,176,569)	(4)
6.5000	17,435	(201,099)	39,074,233	678	(283,009,640)	(3)
6.5000	17,435	(201,860)	38,872,373	710	(282,841,921)	(3)
6.5000	17,435	(202,624)	38,669,749	743	(282,673,408)	(3)
6.5000	17,435	(203,390)	38,466,359	775	(282,504,099)	(3)
6.5000	17,435	(204,160)	38,262,199	808	(282,333,990)	(3)
6.5000	17,435	(204,932)	38,057,267	840	(282,163,079)	(3)
6.5000	17,435	(205,706)	37,851,561	873	(281,991,363)	(3)
6.5000	17,435	(206,483)	37,645,078	905	(281,818,839)	(3)
6.5000	17,435	(207,263)	37,437,815	938	(281,645,505)	(3)
6.5000	17,435	(208,046)	37,229,769	970	(281,471,356)	(3)
6.5000	17,435	(208,832)	37,020,937	1,003	(281,296,391)	(3)
6.5000	17,435	(209,620)	36,811,317	1,035	(281,120,607)	(3)
6.5000	17,435	(210,411)	36,600,906	1,068	(280,944,000)	(3)
6.5000	17,435	(211,204)	36,389,702	1,100	(280,766,568)	(3)
6.5000	17,435	(212,001)	36,177,701	1,133	(280,588,308)	(3)
6.5000	17,435	(212,800)	35,964,901	1,165	(280,409,216)	(3)
6.5000	17,435	(213,602)	35,751,298	1,198	(280,229,291)	(3)
6.5000	17,435	(214,407)	35,536,891	1,230	(280,048,528)	(3)
6.5000	17,435	(215,215)	35,321,676	1,263	(279,866,925)	(3)
6.5000	17,435	(216,026)	35,105,650	1,295	(279,684,479)	(3)
6.5000	17,435	(216,839)	34,888,812	1,328	(279,501,187)	(3)
6.5000	17,435	(217,655)	34,671,157	1,360	(279,317,045)	(3)
6.5000	17,435	(218,474)	34,452,682	1,393	(279,132,052)	(3)
6.5000	17,435	(219,296)	34,233,386	1,425	(278,946,204)	(3)
6.5000	17,435	(220,121)	34,013,266	1,457	(278,759,497)	(3)
6.5000	17,435	(220,948)	33,792,317	1,490	(278,571,929)	(3)
6.5000	17,435	(221,779)	33,570,538	1,522	(278,383,497)	(3)
6.5000	17,435	(222,613)	33,347,925	1,555	(278,194,197)	(3)
6.5000	17,435	(223,449)	33,124,477	1,587	(278,004,027)	(3)
6.5000	17,435	(224,288)	32,900,188	1,620	(277,812,983)	(3)
6.5000	17,435	(225,130)	32,675,058	1,652	(277,621,063)	(3)
6.5000	17,435	(225,976)	32,449,082	1,684	(277,428,263)	(3)
6.5000	17,435	(226,824)	32,222,258	1,717	(277,234,579)	(3)
6.5000	17,435	(227,675)	31,994,584	1,749	(277,040,010)	(3)
6.5000	17,435	(228,529)	31,766,055	1,781	(276,844,552)	(2)
6.5000	17,435	(229,386)	31,536,669	1,814	(276,648,201)	(2)
6.5000	17,435	(230,246)	31,306,423	1,846	(276,450,955)	(2)
6.5000	17,435	(231,109)	31,075,314	1,879	(276,252,810)	(2)
6.5000	17,435	(231,975)	30,843,339	1,911	(276,053,763)	(2)

6.5000	17,435	(232,844)	30,610,494	1,943	(275,853,811)	(2)
6.5000	17,435	(233,716)	30,376,778	1,976	(275,652,950)	(2)
6.5000	17,435	(234,592)	30,142,186	2,008	(275,451,178)	(2)
6.5000	17,435	(235,470)	29,906,717	2,040	(275,248,491)	(2)
6.5000	17,435	(236,351)	29,670,366	2,072	(275,044,886)	(2)
6.5000	17,435	(237,235)	29,433,130	2,105	(274,840,360)	(2)
6.5000	17,435	(238,123)	29,195,007	2,137	(274,634,909)	(2)
6.5000	17,435	(239,013)	28,955,994	2,169	(274,428,530)	(2)
6.5000	17,435	(239,907)	28,716,087	2,202	(274,221,220)	(2)
6.5000	17,435	(240,804)	28,475,283	2,234	(274,012,976)	(2)
6.5000	17,435	(241,704)	28,233,579	2,266	(273,803,794)	(2)
6.5000	17,435	(242,607)	27,990,972	2,298	(273,593,670)	(2)
6.5000	17,435	(243,513)	27,747,459	2,330	(273,382,602)	(2)
6.5000	17,435	(244,423)	27,503,036	2,363	(273,170,586)	(2)
6.5000	17,435	(245,335)	27,257,701	2,395	(272,957,619)	(2)
6.5000	17,435	(246,251)	27,011,450	2,427	(272,743,698)	(2)
6.5000	17,435	(247,170)	26,764,280	2,459	(272,528,818)	(2)
6.5000	17,435	(248,092)	26,516,188	2,491	(272,312,977)	(2)
6.5000	17,435	(249,017)	26,267,171	2,524	(272,096,171)	(2)
6.5000	17,435	(249,946)	26,017,225	2,556	(271,878,397)	(2)
6.5000	17,435	(250,878)	25,766,347	2,588	(271,659,651)	(2)
6.5000	17,435	(251,813)	25,514,534	2,620	(271,439,931)	(2)
6.5000	17,435	(252,751)	25,261,782	2,652	(271,219,231)	(2)
6.5000	17,435	(253,693)	25,008,089	2,684	(270,997,549)	(2)
6.5000	17,435	(254,638)	24,753,451	2,716	(270,774,882)	(2)
6.5000	17,435	(255,586)	24,497,865	2,748	(270,551,226)	(2)
6.5000	17,435	(256,538)	24,241,327	2,780	(270,326,577)	(2)
6.5000	17,435	(257,493)	23,983,834	2,812	(270,100,932)	(2)
6.5000	17,435	(258,451)	23,725,383	2,844	(269,874,288)	(2)
6.5000	17,435	(259,412)	23,465,971	2,876	(269,646,640)	(2)
6.5000	17,435	(260,377)	23,205,594	2,908	(269,417,986)	(2)
6.5000	17,435	(261,346)	22,944,248	2,940	(269,188,321)	(2)
6.5000	17,435	(262,317)	22,681,931	2,972	(268,957,642)	(2)
6.5000	17,435	(263,292)	22,418,638	3,004	(268,725,946)	(2)
6.5000	17,435	(264,271)	22,154,367	3,036	(268,493,229)	(2)
6.5000	17,435	(265,253)	21,889,115	3,068	(268,259,487)	(1)
6.5000	17,435	(266,238)	21,622,877	3,100	(268,024,716)	(1)
6.5000	17,435	(267,227)	21,355,650	3,132	(267,788,914)	(1)
6.5000	17,435	(268,219)	21,087,431	3,164	(267,552,075)	(1)
6.5000	17,435	(269,215)	20,818,216	3,196	(267,314,198)	(1)
6.5000	17,435	(270,214)	20,548,002	3,227	(267,075,277)	(1)
6.5000	17,435	(271,216)	20,276,786	3,259	(266,835,310)	(1)
6.5000	17,435	(272,223)	20,004,563	3,291	(266,594,292)	(1)
6.5000	17,435	(273,232)	19,731,331	3,323	(266,352,220)	(1)
6.5000	17,435	(274,245)	19,457,086	3,355	(266,109,090)	(1)
6.5000	17,435	(275,262)	19,181,824	3,386	(265,864,898)	(1)
6.5000	17,435	(276,282)	18,905,542	3,418	(265,619,641)	(1)
6.5000	17,435	(277,306)	18,628,236	3,450	(265,373,314)	(1)
6.5000	17,435	(278,333)	18,349,902	3,482	(265,125,914)	(1)
6.5000	17,435	(279,364)	18,070,538	3,513	(264,877,438)	(1)
6.5000	17,435	(280,399)	17,790,139	3,545	(264,627,881)	(1)
6.5000	17,435	(281,437)	17,508,702	3,577	(264,377,239)	(1)
6.5000	17,435	(282,479)	17,226,223	3,608	(264,125,509)	(1)
6.5000	17,435	(283,524)	16,942,699	3,640	(263,872,687)	(1)
6.5000	17,435	(284,573)	16,658,125	3,671	(263,618,768)	(1)
6.5000	17,435	(285,626)	16,372,499	3,703	(263,363,750)	(1)

6.5000	17,435	(286,683)	16,085,816	3,734	(263,107,628)	(1)
6.5000	17,435	(287,743)	15,798,074	3,766	(262,850,398)	(1)
6.5000	17,435	(288,806)	15,509,267	3,797	(262,592,056)	(1)
6.5000	17,435	(289,874)	15,219,393	3,829	(262,332,598)	(1)
6.5000	17,435	(290,945)	14,928,448	3,860	(262,072,021)	(1)
6.5000	17,435	(292,020)	14,636,428	3,892	(261,810,320)	(1)
6.5000	17,435	(293,099)	14,343,329	3,923	(261,547,492)	(1)
6.5000	17,435	(294,181)	14,049,147	3,955	(261,283,532)	(1)
6.5000	17,435	(295,268)	13,753,880	3,986	(261,018,436)	(1)
6.5000	17,435	(296,358)	13,457,522	4,017	(260,752,201)	(1)
6.5000	17,435	(297,452)	13,160,070	4,049	(260,484,822)	(1)
6.5000	17,435	(298,549)	12,861,521	4,080	(260,216,296)	(1)
6.5000	17,435	(299,651)	12,561,870	4,111	(259,946,617)	(1)
6.5000	17,435	(300,756)	12,261,114	4,142	(259,675,783)	(1)
6.5000	17,435	(301,865)	11,959,249	4,174	(259,403,788)	(1)
6.5000	17,435	(302,978)	11,656,271	4,205	(259,130,630)	(1)
6.5000	17,435	(304,095)	11,352,175	4,236	(258,856,303)	(1)
6.5000	17,435	(305,216)	11,046,959	4,267	(258,580,804)	(1)
6.5000	17,435	(306,341)	10,740,618	4,298	(258,304,128)	(1)
6.5000	17,435	(307,470)	10,433,148	4,329	(258,026,272)	(1)
6.5000	17,435	(308,602)	10,124,546	4,360	(257,747,231)	(1)
6.5000	17,435	(309,739)	9,814,807	4,391	(257,467,000)	(1)
6.5000	17,435	(310,879)	9,503,928	4,422	(257,185,577)	(1)
6.5000	17,435	(312,024)	9,191,904	4,453	(256,902,956)	(1)
6.5000	17,435	(313,172)	8,878,732	4,484	(256,619,133)	(1)
6.5000	17,435	(314,325)	8,564,407	4,515	(256,334,104)	(1)
6.5000	17,435	(315,481)	8,248,925	4,546	(256,047,864)	(0)
6.5000	17,435	(316,642)	7,932,283	4,577	(255,760,410)	(0)
6.5000	17,435	(317,807)	7,614,477	4,608	(255,471,737)	(0)
6.5000	17,435	(318,975)	7,295,502	4,639	(255,181,841)	(0)
6.5000	17,435	(320,148)	6,975,353	4,669	(254,890,718)	(0)
6.5000	17,435	(321,325)	6,654,029	4,700	(254,598,362)	(0)
6.5000	17,435	(322,506)	6,331,523	4,731	(254,304,770)	(0)
6.5000	17,435	(323,691)	6,007,832	4,762	(254,009,937)	(0)
6.5000	17,435	(324,880)	5,682,952	4,792	(253,713,860)	(0)
6.5000	17,435	(326,073)	5,356,878	4,823	(253,416,533)	(0)
6.5000	17,435	(327,271)	5,029,607	4,853	(253,117,952)	(0)
6.5000	17,435	(328,473)	4,701,135	4,884	(252,818,112)	(0)
6.5000	17,435	(329,678)	4,371,456	4,915	(252,517,010)	(0)
6.5000	17,435	(330,889)	4,040,568	4,945	(252,214,640)	(0)
6.5000	17,435	(332,103)	3,708,465	4,976	(251,910,999)	(0)
6.5000	17,435	(333,321)	3,375,144	5,006	(251,606,081)	(0)
6.5000	17,435	(334,544)	3,040,599	5,036	(251,299,883)	(0)
6.5000	17,435	(335,631)	(503,090)	174	(250,992,962)	(0)
6.5000	17,435	(337,565)	(840,655)	203	(250,684,188)	0
6.5000	17,435	(338,800)	(1,179,455)	232	(250,374,120)	0
6.5000	17,435	(340,040)	(1,519,496)	260	(250,062,753)	0
6.5000	17,435	(341,285)	(1,860,780)	289	(249,750,082)	0
6.5000	17,435	(342,533)	(2,203,314)	317	(249,436,103)	0
6.5000	17,435	(343,787)	(2,547,100)	346	(249,120,811)	0
6.5000	17,435	(345,044)	(2,892,144)	374	(248,804,202)	0
6.5000	17,435	(346,306)	(3,238,450)	402	(248,486,270)	0
6.5000	17,435	(347,572)	(3,586,022)	431	(248,167,011)	0
6.5000	17,435	(348,842)	(3,934,864)	459	(247,846,421)	0
6.5000	17,435	(350,117)	(4,284,982)	487	(247,524,495)	0
6.5000	17,435	(351,397)	(4,636,379)	516	(247,201,227)	0

6.5000	17,435	(352,681)	(4,989,060)	544	(246,876,614)	0
6.5000	17,435	(353,969)	(5,343,029)	572	(246,550,650)	0
6.5000	17,435	(355,262)	(5,698,291)	600	(246,223,330)	0
6.5000	17,435	(356,560)	(6,054,851)	628	(245,894,651)	0
6.5000	17,435	(357,861)	(6,412,712)	656	(245,564,606)	0
6.5000	17,435	(359,168)	(6,771,880)	684	(245,233,192)	0
6.5000	17,435	(360,479)	(7,132,359)	712	(244,900,403)	0
6.5000	17,435	(361,795)	(7,494,154)	740	(244,566,234)	0
6.5000	17,435	(363,115)	(7,857,268)	768	(244,230,681)	0
6.5000	17,435	(364,439)	(8,221,708)	796	(243,893,739)	0
6.5000	17,435	(365,769)	(8,587,477)	823	(243,555,403)	0
6.5000	17,435	(367,103)	(8,954,579)	851	(243,215,667)	0
6.5000	17,435	(368,442)	(9,323,021)	879	(242,874,527)	0
6.5000	17,435	(369,785)	(9,692,806)	907	(242,531,978)	0
6.5000	17,435	(371,133)	(10,063,939)	934	(242,188,015)	0
6.5000	17,435	(372,486)	(10,436,424)	962	(241,842,633)	0
6.5000	17,435	(373,843)	(10,810,267)	989	(241,495,827)	0
6.5000	17,435	(375,205)	(11,185,472)	1,017	(241,147,592)	1
6.5000	17,435	(376,572)	(11,562,044)	1,044	(240,797,922)	1
6.5000	17,435	(377,944)	(11,939,988)	1,072	(240,446,813)	1
6.5000	17,435	(379,320)	(12,319,308)	1,099	(240,094,260)	1
6.5000	17,435	(380,701)	(12,700,009)	1,126	(239,740,257)	1
6.5000	17,435	(382,087)	(13,082,097)	1,153	(239,384,800)	1
6.5000	17,435	(383,478)	(13,465,575)	1,181	(239,027,882)	1
6.5000	17,435	(384,874)	(13,850,449)	1,208	(238,669,500)	1
6.5000	17,435	(386,275)	(14,236,724)	1,235	(238,309,648)	1
6.5000	17,435	(387,680)	(14,624,404)	1,262	(237,948,320)	1
6.5000	17,435	(389,090)	(15,013,494)	1,289	(237,585,512)	1
6.5000	17,435	(390,506)	(15,404,000)	1,316	(237,221,218)	1
6.5000	17,435	(391,926)	(15,795,925)	1,343	(236,855,433)	1
6.5000	17,435	(393,351)	(16,189,276)	1,370	(236,488,152)	1
6.5000	17,435	(394,781)	(16,584,058)	1,397	(236,119,369)	1
6.5000	17,435	(396,216)	(16,980,274)	1,423	(235,749,079)	1
6.5000	17,435	(397,656)	(17,377,930)	1,450	(235,377,277)	1
6.5000	17,435	(399,101)	(17,777,031)	1,477	(235,003,957)	1
6.5000	17,435	(400,552)	(18,177,583)	1,503	(234,629,114)	1
6.5000	17,435	(402,007)	(18,579,590)	1,530	(234,252,743)	1
6.5000	17,435	(403,467)	(18,983,057)	1,556	(233,874,838)	1
6.5000	17,435	(404,932)	(19,387,989)	1,583	(233,495,393)	1
6.5000	17,435	(406,403)	(19,794,392)	1,609	(233,114,404)	1
6.5000	17,435	(407,878)	(20,202,270)	1,636	(232,731,865)	1
6.5000	17,435	(409,359)	(20,611,629)	1,662	(232,347,771)	1
6.5000	17,435	(410,845)	(21,022,474)	1,688	(231,962,115)	1
6.5000	17,435	(412,336)	(21,434,810)	1,714	(231,574,892)	1
6.5000	17,435	(413,832)	(21,848,643)	1,740	(231,186,098)	1
6.5000	17,435	(415,334)	(22,263,976)	1,766	(230,795,725)	1
6.5000	17,435	(416,840)	(22,680,817)	1,792	(230,403,770)	1
6.5000	17,435	(418,352)	(23,099,169)	1,818	(230,010,225)	1
6.5000	17,435	(419,869)	(23,519,038)	1,844	(229,615,086)	1
6.5000	17,435	(421,392)	(23,940,430)	1,870	(229,218,346)	1
6.5000	17,435	(422,920)	(24,363,350)	1,896	(228,820,001)	1
6.5000	17,435	(424,453)	(24,787,803)	1,922	(228,420,044)	1
6.5000	17,435	(425,991)	(25,213,794)	1,947	(228,018,470)	1
6.5000	17,435	(427,535)	(25,641,329)	1,973	(227,615,273)	1
6.5000	17,435	(429,084)	(26,070,413)	1,998	(227,210,448)	1
6.5000	17,435	(430,639)	(26,501,052)	2,024	(226,803,988)	1

6.5000	17,435	(432,199)	(26,933,251)	2,049	(226,395,887)	1
6.5000	17,435	(433,764)	(27,367,015)	2,075	(225,986,141)	1
6.5000	17,435	(435,335)	(27,802,350)	2,100	(225,574,743)	1
6.5000	17,435	(436,911)	(28,239,261)	2,125	(225,161,687)	1
6.5000	17,435	(438,493)	(28,677,755)	2,150	(224,746,967)	1
6.5000	17,435	(440,080)	(29,117,835)	2,175	(224,330,578)	1
6.5000	17,435	(441,673)	(29,559,508)	2,200	(223,912,514)	1
6.5000	17,435	(443,272)	(30,002,780)	2,225	(223,492,768)	1
6.5000	17,435	(444,876)	(30,447,656)	2,250	(223,071,336)	1
6.5000	17,435	(446,485)	(30,894,141)	2,275	(222,648,210)	1
6.5000	17,435	(448,100)	(31,342,241)	2,300	(222,223,385)	1
6.5000	17,435	(449,721)	(31,791,962)	2,324	(221,796,854)	1
6.5000	17,435	(451,348)	(32,243,310)	2,349	(221,368,613)	1
6.5000	17,435	(452,980)	(32,696,289)	2,374	(220,938,654)	1
6.5000	17,435	(454,617)	(33,150,907)	2,398	(220,506,972)	1
6.5000	17,435	(456,261)	(33,607,168)	2,423	(220,073,560)	1
6.5000	17,435	(457,910)	(34,065,077)	2,447	(219,638,413)	1
6.5000	17,435	(459,565)	(34,524,642)	2,471	(219,201,525)	1
6.5000	17,435	(461,226)	(34,985,868)	2,495	(218,762,888)	1
6.5000	17,435	(462,892)	(35,448,760)	2,520	(218,322,498)	1
6.5000	17,435	(464,564)	(35,913,324)	2,544	(217,880,347)	1
6.5000	17,435	(466,242)	(36,379,566)	2,568	(217,436,430)	1
6.5000	17,435	(467,926)	(36,847,493)	2,591	(216,990,740)	1
6.5000	17,435	(469,616)	(37,317,109)	2,615	(216,543,271)	1
6.5000	17,435	(471,312)	(37,788,420)	2,639	(216,094,017)	1
6.5000	17,435	(473,013)	(38,261,434)	2,663	(215,642,971)	1
6.5000	17,435	(474,721)	(38,736,154)	2,686	(215,190,128)	1
6.5000	17,435	(476,434)	(39,212,588)	2,710	(214,735,480)	1
6.5000	17,435	(478,154)	(39,690,742)	2,733	(214,279,022)	1
6.5000	17,435	(479,879)	(40,170,621)	2,757	(213,820,747)	1
6.5000	17,435	(481,610)	(40,652,231)	2,780	(213,360,648)	1
6.5000	17,435	(483,348)	(41,135,579)	2,803	(212,898,720)	1
6.5000	17,435	(485,091)	(41,620,670)	2,827	(212,434,955)	2
6.5000	17,435	(486,841)	(42,107,510)	2,850	(211,969,347)	2
6.5000	17,435	(488,596)	(42,596,107)	2,873	(211,501,890)	2
6.5000	17,435	(490,358)	(43,086,465)	2,896	(211,032,577)	2
6.5000	17,435	(492,126)	(43,578,590)	2,918	(210,561,402)	2
6.5000	17,435	(493,900)	(44,072,490)	2,941	(210,088,357)	2
6.5000	17,435	(495,680)	(44,568,170)	2,964	(209,613,437)	2
6.5000	17,435	(497,466)	(45,065,636)	2,986	(209,136,635)	2
6.5000	17,435	(499,259)	(45,564,895)	3,009	(208,657,944)	2
6.5000	17,435	(501,058)	(46,065,953)	3,031	(208,177,357)	2
6.5000	17,435	(502,863)	(46,568,815)	3,054	(207,694,868)	2
6.5000	17,435	(504,674)	(47,073,489)	3,076	(207,210,470)	2
6.5000	17,435	(506,492)	(47,579,981)	3,098	(206,724,157)	2
6.5000	17,435	(508,316)	(48,088,297)	3,120	(206,235,921)	2
6.5000	17,435	(510,146)	(48,598,443)	3,142	(205,745,755)	2
6.5000	17,435	(511,983)	(49,110,426)	3,164	(205,253,654)	2
6.5000	17,435	(513,826)	(49,624,251)	3,186	(204,759,609)	2
6.5000	17,435	(515,675)	(50,139,927)	3,208	(204,263,615)	2
6.5000	17,435	(517,531)	(50,657,458)	3,229	(203,765,664)	2
6.5000	17,435	(519,394)	(51,176,851)	3,251	(203,265,749)	2
6.5000	17,435	(521,262)	(51,698,114)	3,272	(202,763,864)	2
6.5000	17,435	(523,138)	(52,221,251)	3,294	(202,260,001)	2
6.5000	17,435	(525,020)	(52,746,271)	3,315	(201,754,154)	2
6.5000	17,435	(526,908)	(53,273,179)	3,336	(201,246,315)	2

6.5000	17,435	(528,803)	(53,801,982)	3,357	(200,736,478)	2
6.5000	17,435	(530,705)	(54,332,687)	3,378	(200,224,635)	2
6.5000	17,435	(532,613)	(54,865,300)	3,399	(199,710,779)	2
6.5000	17,435	(534,528)	(55,399,828)	3,420	(199,194,904)	2
6.5000	17,435	(536,449)	(55,936,277)	3,441	(198,677,002)	2
6.5000	17,435	(538,377)	(56,474,654)	3,461	(198,157,065)	2
6.5000	17,435	(540,312)	(57,014,966)	3,482	(197,635,088)	2
6.5000	17,435	(542,254)	(57,557,220)	3,502	(197,111,061)	2
6.5000	17,435	(544,202)	(58,101,423)	3,523	(196,584,979)	2
6.5000	17,435	(546,157)	(58,647,580)	3,543	(196,056,835)	2
6.5000	17,435	(548,119)	(59,195,699)	3,563	(195,526,620)	2
6.5000	17,435	(550,088)	(59,745,787)	3,583	(194,994,327)	2
6.5000	17,435	(552,064)	(60,297,851)	3,603	(194,459,949)	2
6.5000	17,435	(554,046)	(60,851,897)	3,623	(193,923,479)	2
6.5000	17,435	(556,036)	(61,407,933)	3,643	(193,384,910)	2
6.5000	17,435	(558,032)	(61,965,965)	3,662	(192,844,233)	2
6.5000	17,435	(560,035)	(62,526,000)	3,682	(192,301,442)	2
6.5000	17,435	(562,045)	(63,088,046)	3,701	(191,756,529)	2
6.5000	17,435	(564,063)	(63,652,108)	3,721	(191,209,486)	2
6.5000	17,435	(566,087)	(64,218,195)	3,740	(190,660,307)	2
6.5000	17,435	(568,118)	(64,786,313)	3,759	(190,108,982)	2
6.5000	17,435	(570,156)	(65,356,469)	3,778	(189,555,506)	2
6.5000	17,435	(572,202)	(65,928,671)	3,797	(188,999,870)	2
6.5000	17,435	(574,254)	(66,502,925)	3,816	(188,442,067)	2
6.5000	17,435	(576,314)	(67,079,239)	3,834	(187,882,088)	2
6.5000	17,435	(578,381)	(67,657,620)	3,853	(187,319,927)	2
6.5000	17,435	(580,455)	(68,238,075)	3,871	(186,755,576)	2
6.5000	17,435	(582,536)	(68,820,611)	3,890	(186,189,026)	2
6.5000	17,435	(584,624)	(69,405,235)	3,908	(185,620,271)	2
6.5000	17,435	(586,720)	(69,991,955)	3,926	(185,049,302)	2
6.5000	17,435	(588,823)	(70,580,778)	3,944	(184,476,111)	2
6.5000	17,435	(590,933)	(71,171,712)	3,962	(183,900,691)	2
6.5000	17,435	(593,051)	(71,764,763)	3,980	(183,323,034)	2
6.5000	17,435	(595,176)	(72,359,939)	3,997	(182,743,132)	2
6.5000	17,435	(597,308)	(72,957,247)	4,015	(182,160,977)	2
6.5000	17,435	(599,448)	(73,556,695)	4,032	(181,576,561)	2
6.5000	17,435	(601,595)	(74,158,291)	4,049	(180,989,876)	2
6.5000	17,435	(603,750)	(74,762,041)	4,067	(180,400,914)	2
6.5000	17,435	(605,912)	(75,367,953)	4,084	(179,809,667)	2
6.5000	17,435	(608,082)	(75,976,035)	4,101	(179,216,127)	2
6.5000	17,435	(610,259)	(76,586,295)	4,117	(178,620,286)	2
6.5000	17,435	(612,444)	(77,198,739)	4,134	(178,022,135)	2
6.5000	17,435	(614,637)	(77,813,375)	4,151	(177,421,667)	2
6.5000	17,435	(616,837)	(78,430,212)	4,167	(176,818,874)	2
6.5000	17,435	(619,044)	(79,049,256)	4,184	(176,213,746)	2
6.5000	17,435	(621,260)	(79,670,516)	4,200	(175,606,277)	2
6.5000	17,435	(623,483)	(80,293,998)	4,216	(174,996,457)	2
6.5000	17,435	(625,713)	(80,919,712)	4,232	(174,384,279)	2
6.5000	17,435	(627,952)	(81,547,664)	4,248	(173,769,733)	2
6.5000	17,435	(630,198)	(82,177,862)	4,263	(173,152,813)	2
6.5000	17,435	(632,452)	(82,810,315)	4,279	(172,533,509)	2
6.5000	17,435	(634,714)	(83,445,029)	4,294	(171,911,812)	2
6.5000	17,435	(636,984)	(84,082,013)	4,310	(171,287,715)	2
6.5000	17,435	(639,262)	(84,721,275)	4,325	(170,661,210)	2
6.5000	17,435	(641,547)	(85,362,822)	4,340	(170,032,286)	2
6.5000	17,435	(643,841)	(86,006,663)	4,355	(169,400,937)	2

Information is missing from page 208 to 237 of the digital copy of this thesis.

It has not been possible to be completely digitised all information on page due to tight book fold binding.

Please see the print copy of the thesis for a complete manuscript.

6.5000	17,435	(646,143)	(86,652,806)	4,369	(168,767,153)	2
6.5000	17,435	(789,139)	(90,615,133)	1,700	(82,187,569)	2
30.0000	498,957	(312,676)	(90,927,808)	1,692	(81,872,502)	143
30.0000	498,957	(313,749)	(91,241,557)	1,684	(81,556,225)	143
30.0000	498,957	(314,826)	(91,556,383)	1,676	(81,238,732)	143
30.0000	498,957	(315,906)	(91,872,289)	1,667	(80,920,021)	143
30.0000	498,957	(316,990)	(92,189,279)	1,659	(80,600,086)	143
30.0000	498,957	(318,078)	(92,507,357)	1,651	(80,278,924)	143
30.0000	498,957	(319,170)	(92,826,527)	1,642	(79,956,530)	143
30.0000	498,957	(320,265)	(93,146,792)	1,634	(79,632,899)	143
30.0000	498,957	(321,364)	(93,468,156)	1,625	(79,308,028)	143
30.0000	498,957	(322,467)	(93,790,622)	1,616	(78,981,911)	143
30.0000	498,957	(323,573)	(94,114,195)	1,607	(78,654,546)	143
30.0000	498,957	(324,683)	(94,438,879)	1,598	(78,325,926)	143
30.0000	498,957	(325,797)	(94,764,676)	1,589	(77,996,049)	143
30.0000	498,957	(326,915)	(95,091,591)	1,580	(77,664,908)	143
30.0000	498,957	(328,037)	(95,419,628)	1,571	(77,332,501)	143
30.0000	498,957	(329,162)	(95,748,791)	1,562	(76,998,822)	143
30.0000	498,957	(330,292)	(96,079,082)	1,553	(76,663,868)	143
30.0000	498,957	(331,425)	(96,410,507)	1,543	(76,327,632)	143
30.0000	498,957	(332,562)	(96,743,069)	1,534	(75,990,112)	143
30.0000	498,957	(333,703)	(97,076,772)	1,524	(75,651,302)	143
30.0000	498,957	(334,848)	(97,411,620)	1,514	(75,311,199)	143
30.0000	498,957	(335,996)	(97,747,616)	1,505	(74,969,796)	143
30.0000	498,957	(337,149)	(98,084,765)	1,495	(74,627,091)	143
30.0000	498,957	(338,305)	(98,423,070)	1,485	(74,283,077)	143
30.0000	498,957	(339,466)	(98,762,536)	1,475	(73,937,752)	143
30.0000	498,957	(340,630)	(99,103,166)	1,465	(73,591,109)	143
30.0000	498,957	(341,799)	(99,444,964)	1,455	(73,243,145)	143
30.0000	498,957	(342,971)	(99,787,935)	1,444	(72,893,855)	143
30.0000	498,957	(344,147)	(100,132,083)	1,434	(72,543,234)	143
30.0000	498,957	(345,328)	(100,477,410)	1,423	(72,191,277)	143
30.0000	498,957	(346,512)	(100,823,922)	1,413	(71,837,980)	143
30.0000	498,957	(347,700)	(101,171,623)	1,402	(71,483,338)	143
30.0000	498,957	(348,893)	(101,520,515)	1,392	(71,127,346)	143
30.0000	498,957	(350,089)	(101,870,605)	1,381	(70,770,000)	143
30.0000	498,957	(351,290)	(102,221,895)	1,370	(70,411,295)	143
30.0000	498,957	(352,495)	(102,574,389)	1,359	(70,051,225)	143
30.0000	498,957	(353,703)	(102,928,093)	1,348	(69,689,787)	143
30.0000	498,957	(354,916)	(103,283,009)	1,337	(69,326,976)	143
30.0000	498,957	(356,133)	(103,639,142)	1,325	(68,962,785)	143
30.0000	498,957	(357,354)	(103,996,497)	1,314	(68,597,212)	143
30.0000	498,957	(358,580)	(104,355,076)	1,302	(68,230,250)	143
30.0000	498,957	(359,809)	(104,714,886)	1,291	(67,861,896)	143
30.0000	498,957	(361,043)	(105,075,929)	1,279	(67,492,143)	143
30.0000	498,957	(362,281)	(105,438,209)	1,267	(67,120,988)	143
30.0000	498,957	(363,523)	(105,801,732)	1,256	(66,748,425)	143
30.0000	498,957	(364,769)	(106,166,501)	1,244	(66,374,449)	143
30.0000	498,957	(366,020)	(106,532,521)	1,232	(65,999,055)	143
30.0000	498,957	(367,275)	(106,899,796)	1,219	(65,622,239)	143
30.0000	498,957	(368,534)	(107,268,329)	1,207	(65,243,995)	143
30.0000	498,957	(369,797)	(107,638,126)	1,195	(64,864,319)	143
30.0000	498,957	(371,065)	(108,009,191)	1,182	(64,483,205)	143
30.0000	498,957	(372,337)	(108,381,527)	1,170	(64,100,648)	143
30.0000	498,957	(373,613)	(108,755,140)	1,157	(63,716,643)	143
30.0000	498,957	(374,894)	(109,130,034)	1,144	(63,331,185)	143

.0000	498,957	(376,179)(109,506,213)	1,131	(62,944,269)	143
.0000	498,957	(377,468)(109,883,681)	1,118	(62,555,890)	143
.0000	498,957	(378,762)(110,262,442)	1,105	(62,166,043)	143
.0000	498,957	(380,060)(110,642,502)	1,092	(61,774,723)	143
.0000	498,957	(381,362)(111,023,865)	1,079	(61,381,923)	143
.0000	498,957	(382,670)(111,406,534)	1,066	(60,987,640)	143
.0000	498,957	(383,981)(111,790,515)	1,052	(60,591,868)	143
.0000	498,957	(385,297)(112,175,812)	1,038	(60,194,601)	143
.0000	498,957	(386,617)(112,562,429)	1,025	(59,795,835)	143
.0000	498,957	(387,942)(112,950,372)	1,011	(59,395,564)	143
.0000	498,957	(389,272)(113,339,643)	997	(58,993,783)	143
.0000	498,957	(390,606)(113,730,249)	983	(58,590,487)	143
.0000	498,957	(391,944)(114,122,193)	969	(58,185,670)	143
.0000	498,957	(393,287)(114,515,480)	954	(57,779,327)	143
.0000	498,957	(394,635)(114,910,114)	940	(57,371,452)	143
.0000	498,957	(395,987)(115,306,101)	926	(56,962,041)	143
.0000	498,957	(397,343)(115,703,444)	911	(56,551,087)	143
.0000	498,957	(398,705)(116,102,149)	896	(56,138,586)	143
.0000	498,957	(400,071)(116,502,220)	882	(55,724,532)	143
.0000	498,957	(401,442)(116,903,662)	867	(55,308,919)	143
.0000	498,957	(402,817)(117,306,479)	852	(54,891,742)	143
.0000	498,957	(404,197)(117,710,675)	836	(54,472,996)	143
.0000	498,957	(405,581)(118,116,257)	821	(54,052,675)	143
.0000	498,957	(406,971)(118,523,228)	806	(53,630,773)	143
.0000	498,957	(408,365)(118,931,593)	790	(53,207,285)	143
.0000	498,957	(409,764)(119,341,356)	775	(52,782,205)	143
.0000	498,957	(411,167)(119,752,524)	759	(52,355,528)	143
.0000	498,957	(412,576)(120,165,100)	743	(51,927,248)	143
.0000	498,957	(413,989)(120,579,089)	727	(51,497,360)	143
.0000	498,957	(415,407)(120,994,496)	711	(51,065,858)	143
.0000	498,957	(416,830)(121,411,325)	695	(50,632,735)	143
.0000	498,957	(418,257)(121,829,583)	678	(50,197,987)	143
.0000	498,957	(419,690)(122,249,273)	662	(49,761,608)	143
.0000	498,957	(421,127)(122,670,400)	645	(49,323,592)	143
.0000	498,957	(422,569)(123,092,969)	628	(48,883,934)	143
.0000	498,957	(424,017)(123,516,986)	612	(48,442,627)	143
.0000	498,957	(425,469)(123,942,454)	595	(47,999,665)	143
.0000	498,957	(426,926)(124,369,380)	578	(47,555,044)	143
.0000	498,957	(428,388)(124,797,767)	560	(47,108,756)	143
.0000	498,957	(429,854)(125,227,622)	543	(46,660,797)	143
.0000	498,957	(431,326)(125,658,948)	525	(46,211,160)	143
.0000	498,957	(432,803)(126,091,751)	508	(45,759,840)	143
.0000	498,957	(434,285)(126,526,036)	490	(45,306,830)	143
.0000	498,957	(435,772)(126,961,808)	472	(44,852,125)	143
.0000	498,957	(437,264)(127,399,072)	454	(44,395,718)	143
.0000	498,957	(438,761)(127,837,834)	436	(43,937,605)	143
.0000	498,957	(440,263)(128,278,097)	418	(43,477,777)	143
.0000	498,957	(441,771)(128,719,867)	400	(43,016,231)	143
.0000	498,957	(443,283)(129,163,150)	381	(42,552,959)	143
.0000	498,957	(444,800)(129,607,951)	362	(42,087,956)	143
.0000	498,957	(446,323)(130,054,274)	344	(41,621,215)	143
.0000	498,957	(447,851)(130,502,125)	325	(41,152,731)	143
.0000	498,957	(449,384)(130,951,509)	306	(40,682,497)	143
.0000	498,957	(450,922)(131,402,431)	286	(40,210,507)	143
.0000	498,957	(452,466)(131,854,896)	267	(39,736,755)	143
.0000	498,957	(454,014)(132,308,911)	248	(39,261,235)	143

.0000	498,957	(455,568)(132,764,479)	228	(38,783,941)	143
.0000	498,957	(457,128)(133,221,606)	208	(38,304,866)	143
.0000	498,957	(458,692)(133,680,299)	188	(37,824,003)	143
.0000	498,957	(460,262)(134,140,560)	168	(37,341,348)	143
.0000	498,957	(461,837)(134,602,398)	148	(36,856,893)	143
.0000	498,957	(463,418)(135,065,815)	128	(36,370,633)	143
.0000	498,957	(465,004)(135,530,819)	107	(35,882,560)	143
.0000	498,957	(466,595)(135,997,414)	87	(35,392,669)	143
.0000	498,957	(468,191)(136,465,605)	66	(34,900,953)	143
.0000	498,957	(469,794)(136,935,399)	45	(34,407,405)	143
.0000	498,957	(471,401)(137,406,800)	24	(33,912,020)	143
.0000	498,957	(473,014)(137,879,814)	3	(33,414,791)	143
.0000	498,957	(474,633)(138,354,446)	(19)	(32,915,711)	143
.0000	498,957	(476,257)(138,830,703)	(40)	(32,414,774)	143
.0000	498,957	(477,886)(139,308,589)	(62)	(31,911,973)	143
.0000	498,957	(479,521)(139,788,110)	(83)	(31,407,302)	143
.0000	498,957	(481,162)(140,269,272)	(105)	(30,900,754)	143
.0000	498,957	(482,808)(140,752,080)	(127)	(30,392,323)	143
.0000	498,957	(484,459)(141,236,539)	(150)	(29,882,002)	143
.0000	498,957	(486,117)(141,722,656)	(172)	(29,369,784)	143
.0000	498,957	(487,780)(142,210,436)	(195)	(28,855,663)	143
.0000	498,957	(489,448)(142,699,884)	(217)	(28,339,632)	143
.0000	498,957	(491,123)(143,191,007)	(240)	(27,821,685)	143
.0000	498,957	(492,803)(143,683,809)	(263)	(27,301,814)	143
.0000	498,957	(494,488)(144,178,297)	(286)	(26,780,013)	143
.0000	498,957	(496,180)(144,674,477)	(310)	(26,256,275)	143
.0000	498,957	(497,877)(145,172,353)	(333)	(25,730,593)	143
.0000	498,957	(499,579)(145,671,933)	(357)	(25,202,961)	143
.0000	498,957	(501,288)(146,173,221)	(381)	(24,673,371)	143
.0000	498,957	(503,003)(146,676,223)	(405)	(24,141,817)	143
.0000	498,957	(504,723)(147,180,946)	(429)	(23,608,292)	143
.0000	498,957	(506,449)(147,687,395)	(453)	(23,072,789)	143
.0000	498,957	(508,181)(148,195,576)	(477)	(22,535,301)	143
.0000	498,957	(509,919)(148,705,495)	(502)	(21,995,820)	143
.0000	498,957	(511,662)(149,217,157)	(527)	(21,454,341)	143
.0000	498,957	(513,412)(149,730,569)	(552)	(20,910,856)	143
.0000	498,957	(515,167)(150,245,736)	(577)	(20,365,358)	143
.0000	498,957	(516,929)(150,762,665)	(602)	(19,817,840)	143
.0000	498,957	(518,696)(151,281,362)	(628)	(19,268,295)	143
.0000	498,957	(520,470)(151,801,832)	(653)	(18,716,715)	143
.0000	498,957	(522,249)(152,324,081)	(679)	(18,163,094)	143
.0000	498,957	(524,035)(152,848,116)	(705)	(17,607,424)	143
.0000	498,957	(525,827)(153,373,943)	(731)	(17,049,699)	143
.0000	498,957	(527,624)(153,901,567)	(757)	(16,489,910)	143
.0000	498,957	(529,428)(154,430,995)	(784)	(15,928,052)	143
.0000	498,957	(531,238)(154,962,233)	(811)	(15,364,115)	143
.0000	498,957	(533,054)(155,495,287)	(837)	(14,798,094)	143
.0000	498,957	(534,876)(156,030,163)	(864)	(14,229,981)	143
.0000	498,957	(536,704)(156,566,867)	(892)	(13,659,769)	143
.0000	498,957	(538,539)(157,105,406)	(919)	(13,087,449)	143
.0000	498,957	(540,380)(157,645,786)	(947)	(12,513,016)	143
.0000	498,957	(542,227)(158,188,012)	(974)	(11,936,461)	143
.0000	498,957	(544,080)(158,732,092)	(1,002)	(11,357,776)	143
.0000	498,957	(545,939)(159,278,032)	(1,030)	(10,776,955)	143
.0000	498,957	(547,805)(159,825,837)	(1,059)	(10,193,991)	143
.0000	498,957	(549,677)(160,375,514)	(1,087)	(9,608,874)	143

.0000	498,957	(551,556)(160,927,070)	(1,116)	(9,021,599)	143
.0000	498,957	(553,441)(161,480,511)	(1,145)	(8,432,156)	143
.0000	498,957	(555,332)(162,035,843)	(1,174)	(7,840,540)	143
.0000	498,957	(557,230)(162,593,073)	(1,203)	(7,246,741)	143
.0000	498,957	(559,134)(163,152,207)	(1,232)	(6,650,753)	143
.0000	498,957	(561,044)(163,713,252)	(1,262)	(6,052,568)	143
.0000	498,957	(562,962)(164,276,213)	(1,292)	(5,452,178)	143
.0000	498,957	(564,885)(164,841,098)	(1,322)	(4,849,575)	143
.0000	498,957	(566,815)(165,407,913)	(1,352)	(4,244,752)	143
.0000	498,957	(568,752)(165,976,665)	(1,382)	(3,637,700)	143
.0000	498,957	(570,695)(166,547,360)	(1,413)	(3,028,412)	143
.0000	498,957	(572,645)(167,120,004)	(1,443)	(2,416,880)	143
.0000	498,957	(574,601)(167,694,605)	(1,474)	(1,803,097)	143
.0000	498,957	(576,564)(168,271,169)	(1,505)	(1,187,054)	143
.0000	498,957	(578,534)(168,849,703)	(1,537)	(568,743)	143
.0000	498,957	(580,510)(169,430,213)	(1,568)	51,843	143
.0000	498,957	(582,493)(170,012,705)	(1,600)	674,713	143
.0000	498,957	(967,852)(262,788,649)	5,652	349,364	87
.0000	(1,282,402)	(911,288)(263,699,936)	5,632	347,664	142
.0000	(1,282,402)	(914,435)(264,614,372)	5,612	345,946	142
.0000	(1,282,402)	(917,594)(265,531,966)	5,592	344,209	142
.0000	(1,282,402)	(920,763)(266,452,729)	5,572	342,454	142
.0000	(1,282,402)	(923,943)(267,376,672)	5,551	340,679	142
.0000	(1,282,402)	(927,134)(268,303,806)	5,530	338,885	142
.0000	(1,282,402)	(930,336)(269,234,142)	5,509	337,072	142
.0000	(1,282,402)	(933,549)(270,167,692)	5,488	335,239	142
.0000	(1,282,402)	(936,773)(271,104,465)	5,466	333,387	142
.0000	(1,282,402)	(940,009)(272,044,474)	5,444	331,515	142
.0000	(1,282,402)	(943,255)(272,987,728)	5,422	329,623	142
.0000	(1,282,402)	(946,512)(273,934,240)	5,400	327,712	142
.0000	(1,282,402)	(949,781)(274,884,021)	5,378	325,780	142
.0000	(1,282,402)	(953,061)(275,837,082)	5,355	323,828	142
.0000	(1,282,402)	(956,352)(276,793,434)	5,332	321,856	142
.0000	(1,282,402)	(959,654)(277,753,088)	5,309	319,864	142
.0000	(1,282,402)	(962,968)(278,716,056)	5,286	317,851	142
.0000	(1,282,402)	(966,293)(279,682,349)	5,263	315,817	142
.0000	(1,282,402)	(969,630)(280,651,978)	5,239	313,763	142
.0000	(1,282,402)	(972,978)(281,624,956)	5,215	311,687	142
.0000	(1,282,402)	(976,337)(282,601,293)	5,191	309,591	142
.0000	(1,282,402)	(979,708)(283,581,001)	5,166	307,473	142
.0000	(1,282,402)	(983,091)(284,564,092)	5,142	305,334	142
.0000	(1,282,402)	(986,485)(285,550,577)	5,117	303,173	142
.0000	(1,282,402)	(989,891)(286,540,468)	5,092	300,991	142
.0000	(1,282,402)	(993,309)(287,533,776)	5,066	298,787	142
.0000	(1,282,402)	(996,738)(288,530,514)	5,041	296,561	142
.0000	(1,282,402)	(1,000,179)(289,530,693)	5,015	294,313	142
.0000	(1,282,402)	(1,003,632)(290,534,325)	4,989	292,043	142
.0000	(1,282,402)	(1,007,097)(291,541,422)	4,962	289,750	142
.0000	(1,282,402)	(1,010,574)(292,551,996)	4,936	287,435	142
.0000	(1,282,402)	(1,014,062)(293,566,058)	4,909	285,098	142
.0000	(1,282,402)	(1,017,563)(294,583,620)	4,882	282,738	142
.0000	(1,282,402)	(1,021,075)(295,604,696)	4,854	280,354	142
.0000	(1,282,402)	(1,024,600)(296,629,296)	4,827	277,948	142
.0000	(1,282,402)	(1,028,137)(297,657,433)	4,799	275,519	142
.0000	(1,282,402)	(1,031,686)(298,689,119)	4,771	273,066	142
.0000	(1,282,402)	(1,035,247)(299,724,366)	4,743	270,590	142

.0000	(1,282,402)(1,038,820)(300,763,186)	4,714	268,091	142
.0000	(1,282,402)(1,042,406)(301,805,592)	4,685	265,567	142
.0000	(1,282,402)(1,046,004)(302,851,596)	4,656	263,020	142
.0000	(1,282,402)(1,049,614)(303,901,211)	4,627	260,448	142
.0000	(1,282,402)(1,053,237)(304,954,448)	4,597	257,853	142
.0000	(1,282,402)(1,056,872)(306,011,320)	4,567	255,233	142
.0000	(1,282,402)(1,060,520)(307,071,840)	4,537	252,588	142
.0000	(1,282,402)(1,064,180)(308,136,019)	4,507	249,919	142
.0000	(1,282,402)(1,067,853)(309,203,872)	4,476	247,225	142
.0000	(1,282,402)(1,071,538)(310,275,410)	4,445	244,506	142
.0000	(1,282,402)(1,075,236)(311,350,646)	4,414	241,762	142
.0000	(1,282,402)(1,078,947)(312,429,592)	4,382	238,993	142
.0000	(1,282,402)(1,082,670)(313,512,262)	4,350	236,198	142
.0000	(1,282,402)(1,086,406)(314,598,668)	4,318	233,377	142
.0000	(1,282,402)(1,090,155)(315,688,823)	4,286	230,531	142
.0000	(1,282,402)(1,093,917)(316,782,740)	4,253	227,659	142
.0000	(1,282,402)(1,097,692)(317,880,432)	4,220	224,761	142
.0000	(1,282,402)(1,101,479)(318,981,912)	4,187	221,837	142
.0000	(1,282,402)(1,105,280)(320,087,192)	4,154	218,886	142
.0000	(1,282,402)(1,109,094)(321,196,286)	4,120	215,909	142
.0000	(1,282,402)(1,112,921)(322,309,207)	4,086	212,905	142
.0000	(1,282,402)(1,116,761)(323,425,967)	4,052	209,874	142
.0000	(1,282,402)(1,120,614)(324,546,581)	4,017	206,816	142
.0000	(1,282,402)(1,124,480)(325,671,062)	3,982	203,731	142
.0000	(1,282,402)(1,128,360)(326,799,422)	3,947	200,618	142
.0000	(1,282,402)(1,132,253)(327,931,675)	3,912	197,478	142
.0000	(1,282,402)(1,136,159)(329,067,834)	3,876	194,310	142
.0000	(1,282,402)(1,140,079)(330,207,914)	3,840	191,115	142
.0000	(1,282,402)(1,144,012)(331,351,926)	3,803	187,891	142
.0000	(1,282,402)(1,147,959)(332,499,885)	3,767	184,639	142
.0000	(1,282,402)(1,151,919)(333,651,804)	3,730	181,359	142
.0000	(1,282,402)(1,155,893)(334,807,697)	3,693	178,050	142
.0000	(1,282,402)(1,159,881)(335,967,578)	3,655	174,712	142
.0000	(1,282,402)(1,163,882)(337,131,460)	3,617	171,345	142
.0000	(1,282,402)(1,167,897)(338,299,356)	3,579	167,950	142
.0000	(1,282,402)(1,171,925)(339,471,281)	3,540	164,525	142
.0000	(1,282,402)(1,175,968)(340,647,249)	3,502	161,070	142
.0000	(1,282,402)(1,180,024)(341,827,273)	3,462	157,586	142
.0000	(1,282,402)(1,184,094)(343,011,367)	3,423	154,072	142
.0000	(1,282,402)(1,188,178)(344,199,546)	3,383	150,528	142
.0000	(1,282,402)(1,192,277)(345,391,822)	3,343	146,954	142
.0000	(1,282,402)(1,196,389)(346,588,211)	3,303	143,349	142
.0000	(1,282,402)(1,200,515)(347,788,727)	3,262	139,714	142
.0000	(1,282,402)(1,204,656)(348,993,382)	3,221	136,049	142
.0000	(1,282,402)(1,208,811)(350,202,193)	3,180	132,352	142
.0000	(1,282,402)(1,212,980)(351,415,173)	3,138	128,624	142
.0000	(1,282,402)(1,217,163)(352,632,335)	3,096	124,865	142
.0000	(1,282,402)(1,221,360)(353,853,696)	3,053	121,075	142
.0000	(1,282,402)(1,225,572)(355,079,268)	3,011	117,252	142
.0000	(1,282,402)(1,229,799)(356,309,067)	2,968	113,398	142
.0000	(1,282,402)(1,234,040)(357,543,107)	2,924	109,512	142
.0000	(1,282,402)(1,238,295)(358,781,403)	2,881	105,594	142
.0000	(1,282,402)(1,242,566)(360,023,968)	2,837	101,643	142
.0000	(1,282,402)(1,246,850)(361,270,819)	2,792	97,659	142
.0000	(1,282,402)(1,251,150)(362,521,968)	2,747	93,643	142
.0000	(1,282,402)(1,255,464)(363,777,432)	2,702	89,594	142

30.0000	(1,282,402)(1,259,793)(365,037,225)	2,657	85,511	142
30.0000	(1,282,402)(1,264,137)(366,301,362)	2,611	81,395	142
30.0000	(1,282,402)(1,268,495)(367,569,857)	2,565	77,246	142
30.0000	(1,282,402)(1,272,869)(368,842,727)	2,519	73,062	142
30.0000	(1,282,402)(1,277,258)(370,119,984)	2,472	68,845	142
30.0000	(1,282,402)(1,281,661)(371,401,646)	2,425	64,593	142
30.0000	(1,282,402)(1,286,080)(372,687,726)	2,377	60,307	142
30.0000	(1,282,402)(1,290,514)(373,978,240)	2,329	55,986	142
30.0000	(1,282,402)(1,294,963)(375,273,204)	2,281	51,631	142
30.0000	(1,282,402)(1,299,428)(376,572,631)	2,232	47,240	142
30.0000	(1,282,402)(1,303,908)(377,876,539)	2,183	42,814	142
30.0000	(1,282,402)(1,308,403)(379,184,942)	2,134	38,352	142
30.0000	(1,282,402)(1,312,913)(380,497,855)	2,084	33,855	142
30.0000	(1,282,402)(1,317,439)(381,815,294)	2,034	29,322	142
30.0000	(1,282,402)(1,321,980)(383,137,274)	1,983	24,753	142
30.0000	(1,282,402)(1,326,537)(384,463,811)	1,933	20,148	142
30.0000	(1,282,402)(1,331,110)(385,794,922)	1,881	15,506	142
30.0000	(1,282,402)(1,335,698)(387,130,620)	1,830	10,827	142
30.0000	(1,282,402)(1,340,302)(388,470,922)	1,778	6,111	142
30.0000	(1,282,402)(1,344,922)(389,815,845)	1,725	1,358	142
30.0000	(1,282,402)(1,349,558)(391,165,403)	1,672	(3,432)	142
30.0000	(1,282,402)(1,354,209)(392,519,612)	1,619	(8,260)	142
30.0000	(1,282,402)(1,358,877)(393,878,489)	1,566	(13,126)	142
30.0000	(1,282,402)(1,363,560)(395,242,049)	1,512	(18,030)	142
30.0000	(1,282,402)(1,368,260)(396,610,309)	1,457	(22,972)	142
30.0000	(1,282,402)(1,372,976)(397,983,285)	1,403	(27,953)	142
30.0000	(1,282,402)(1,377,707)(399,360,992)	1,347	(32,973)	142
30.0000	(1,282,402)(1,382,455)(400,743,448)	1,292	(38,031)	142
30.0000	(1,282,402)(1,387,220)(402,130,667)	1,236	(43,129)	142
30.0000	(1,282,402)(1,392,000)(403,522,667)	1,180	(48,266)	142
30.0000	(1,282,402)(1,396,797)(404,919,465)	1,123	(53,443)	142
30.0000	(1,282,402)(1,401,611)(406,321,075)	1,066	(58,660)	142
30.0000	(1,282,402)(1,406,441)(407,727,516)	1,008	(63,917)	142
30.0000	(1,282,402)(1,411,287)(409,138,803)	950	(69,214)	142
30.0000	(1,282,402)(1,416,150)(410,554,953)	892	(74,552)	142
30.0000	(1,282,402)(1,421,030)(411,975,982)	833	(79,931)	142
30.0000	(1,282,402)(1,425,926)(413,401,909)	773	(85,351)	142
30.0000	(1,282,402)(1,430,839)(414,832,748)	714	(90,812)	142
30.0000	(1,282,402)(1,435,769)(416,268,517)	654	(96,315)	142
30.0000	(1,282,402)(1,440,716)(417,709,234)	593	(101,860)	142
30.0000	(1,282,402)(1,445,680)(419,154,914)	532	(107,447)	142
30.0000	(1,282,402)(1,450,661)(420,605,575)	471	(113,076)	142
30.0000	(1,282,402)(1,455,659)(422,061,234)	409	(118,747)	142
30.0000	(1,282,402)(1,460,674)(423,521,908)	347	(124,462)	142
30.0000	(1,282,402)(1,465,706)(424,987,615)	284	(130,219)	142
30.0000	(1,282,402)(1,470,756)(426,458,371)	221	(136,020)	143
30.0000	(1,282,402)(1,475,823)(427,934,193)	157	(141,865)	143
30.0000	(1,282,402)(1,480,907)(429,415,100)	93	(147,753)	143
30.0000	(1,282,402)(1,486,008)(430,901,108)	29	(153,685)	143
30.0000	(1,282,402)(1,491,127)(432,392,236)	(36)	(159,662)	143
30.0000	(1,282,402)(1,496,264)(433,888,499)	(102)	(165,683)	143
30.0000	(1,282,402)(1,501,418)(435,389,917)	(167)	(171,749)	143
30.0000	(1,282,402)(1,506,590)(436,896,507)	(234)	(177,860)	143
30.0000	(1,282,402)(1,511,779)(438,408,286)	(301)	(184,017)	143
30.0000	(1,282,402)(1,516,986)(439,925,273)	(368)	(190,219)	143
30.0000	(1,282,402)(1,522,212)(441,447,484)	(435)	(196,467)	143

80.0000	(1,282,402)(1,527,455)(442,974,939)	(504)	(202,761)	143
80.0000	(1,282,402)(1,532,715)(444,507,654)	(572)	(209,102)	143
80.0000	(1,282,402)(1,537,994)(446,045,649)	(641)	(215,490)	143
80.0000	(1,282,402)(1,543,291)(447,588,940)	(711)	(221,924)	143
80.0000	(1,282,402)(1,548,607)(449,137,547)	(781)	(228,406)	143
80.0000	(1,282,402)(1,553,940)(450,691,487)	(852)	(234,935)	143
80.0000	(1,282,402)(1,559,292)(452,250,778)	(923)	(241,512)	143
80.0000	(1,282,402)(1,564,661)(453,815,440)	(994)	(248,137)	143
80.0000	(1,282,402)(1,570,050)(455,385,489)	(1,066)	(254,810)	143
80.0000	(1,282,402)(1,575,457)(456,960,946)	(1,138)	(261,532)	143
80.0000	(1,282,402)(1,580,882)(458,541,828)	(1,211)	(268,303)	143
80.0000	(1,282,402)(1,586,326)(460,128,154)	(1,285)	(275,123)	143
80.0000	(1,282,402)(1,591,788)(461,719,942)	(1,359)	(281,992)	143
80.0000	(1,282,402)(1,597,269)(463,317,211)	(1,433)	(288,911)	143
80.0000	(1,282,402)(1,602,769)(464,919,980)	(1,508)	(295,881)	143
80.0000	(1,282,402)(1,608,288)(466,528,268)	(1,584)	(302,900)	143
80.0000	(1,282,402)(1,613,826)(468,142,094)	(1,660)	(309,970)	143
80.0000	(1,282,402)(1,619,382)(469,761,476)	(1,736)	(317,091)	143
80.0000	(1,282,402)(1,624,958)(471,386,434)	(1,813)	(324,264)	143
80.0000	(1,282,402)(1,630,553)(473,016,987)	(1,891)	(331,487)	143
80.0000	(1,282,402)(1,636,166)(474,653,153)	(1,969)	(338,763)	143
80.0000	(1,282,402)(1,641,800)(476,294,953)	(2,047)	(346,091)	143
80.0000	(1,282,402)(1,647,452)(477,942,405)	(2,126)	(353,471)	143
80.0000	(1,282,402)(1,653,124)(479,595,528)	(2,206)	(360,903)	143
80.0000	(1,282,402)(1,658,815)(481,254,343)	(2,286)	(368,389)	143
80.0000	(1,282,402)(1,664,525)(482,918,868)	(2,367)	(375,928)	143
80.0000	(1,282,402)(1,670,255)(484,589,124)	(2,448)	(383,520)	143
80.0000	(1,282,402)(1,676,005)(486,265,129)	(2,530)	(391,167)	143
80.0000	(1,282,402)(1,681,774)(487,946,903)	(2,612)	(398,867)	143
80.0000	(1,282,402)(1,687,564)(489,634,467)	(2,695)	(406,622)	143
80.0000	(1,282,402)(1,094,392)(258,614,018)	4,053	(47,246,582)	221
40.0000	(1,866,842)(1,119,711)(259,733,729)	4,038	(47,179,039)	152
40.0000	(1,866,842)(1,124,559)(260,858,288)	4,023	(47,110,245)	152
40.0000	(1,866,842)(1,129,428)(261,987,716)	4,008	(47,040,191)	152
40.0000	(1,866,842)(1,134,318)(263,122,034)	3,992	(46,968,869)	152
40.0000	(1,866,842)(1,139,229)(264,261,263)	3,977	(46,896,269)	152
40.0000	(1,866,842)(1,144,162)(265,405,424)	3,961	(46,822,382)	152
40.0000	(1,866,842)(1,149,115)(266,554,539)	3,945	(46,747,200)	152
40.0000	(1,866,842)(1,154,091)(267,708,630)	3,929	(46,670,713)	152
40.0000	(1,866,842)(1,159,087)(268,867,718)	3,912	(46,592,912)	152
40.0000	(1,866,842)(1,164,106)(270,031,823)	3,895	(46,513,788)	152
40.0000	(1,866,842)(1,169,146)(271,200,969)	3,879	(46,433,333)	152
40.0000	(1,866,842)(1,174,208)(272,375,178)	3,861	(46,351,536)	152
40.0000	(1,866,842)(1,179,292)(273,554,470)	3,844	(46,268,388)	152
40.0000	(1,866,842)(1,184,398)(274,738,867)	3,826	(46,183,880)	152
40.0000	(1,866,842)(1,189,526)(275,928,393)	3,809	(46,098,003)	152
40.0000	(1,866,842)(1,194,676)(277,123,070)	3,791	(46,010,747)	152
40.0000	(1,866,842)(1,199,849)(278,322,918)	3,772	(45,922,103)	152
40.0000	(1,866,842)(1,205,044)(279,527,962)	3,754	(45,832,060)	152
40.0000	(1,866,842)(1,210,261)(280,738,223)	3,735	(45,740,610)	152
40.0000	(1,866,842)(1,215,501)(281,953,724)	3,716	(45,647,743)	152
40.0000	(1,866,842)(1,220,764)(283,174,488)	3,697	(45,553,449)	152
40.0000	(1,866,842)(1,226,049)(284,400,538)	3,678	(45,457,718)	152
40.0000	(1,866,842)(1,231,358)(285,631,895)	3,658	(45,360,540)	152
40.0000	(1,866,842)(1,236,689)(286,868,584)	3,638	(45,261,906)	152
40.0000	(1,866,842)(1,242,044)(288,110,628)	3,618	(45,161,805)	152

40.0000	(1,866,842)(1,247,421)(289,358,049)	3,598	(45,060,228)	152
40.0000	(1,866,842)(1,252,822)(290,610,871)	3,577	(44,957,164)	152
40.0000	(1,866,842)(1,258,246)(291,869,117)	3,556	(44,852,604)	152
40.0000	(1,866,842)(1,263,694)(293,132,812)	3,535	(44,746,536)	152
40.0000	(1,866,842)(1,269,166)(294,401,977)	3,514	(44,638,952)	152
40.0000	(1,866,842)(1,274,661)(295,676,638)	3,492	(44,529,840)	152
40.0000	(1,866,842)(1,280,179)(296,956,817)	3,470	(44,419,190)	152
40.0000	(1,866,842)(1,285,722)(298,242,539)	3,448	(44,306,992)	152
40.0000	(1,866,842)(1,291,289)(299,533,828)	3,426	(44,193,235)	152
40.0000	(1,866,842)(1,296,880)(300,830,708)	3,403	(44,077,910)	152
40.0000	(1,866,842)(1,302,495)(302,133,203)	3,380	(43,961,004)	152
40.0000	(1,866,842)(1,308,134)(303,441,337)	3,357	(43,842,508)	152
40.0000	(1,866,842)(1,313,798)(304,755,135)	3,334	(43,722,411)	152
40.0000	(1,866,842)(1,319,486)(306,074,621)	3,310	(43,600,702)	152
40.0000	(1,866,842)(1,325,199)(307,399,820)	3,286	(43,477,370)	152
40.0000	(1,866,842)(1,330,937)(308,730,757)	3,262	(43,352,405)	152
40.0000	(1,866,842)(1,336,699)(310,067,456)	3,237	(43,225,795)	152
40.0000	(1,866,842)(1,342,487)(311,409,943)	3,213	(43,097,530)	152
40.0000	(1,866,842)(1,348,299)(312,758,242)	3,187	(42,967,598)	152
40.0000	(1,866,842)(1,354,137)(314,112,379)	3,162	(42,835,988)	152
40.0000	(1,866,842)(1,360,000)(315,472,379)	3,137	(42,702,689)	152
40.0000	(1,866,842)(1,365,888)(316,838,267)	3,111	(42,567,690)	152
40.0000	(1,866,842)(1,371,802)(318,210,069)	3,085	(42,430,980)	152
40.0000	(1,866,842)(1,377,742)(319,587,811)	3,058	(42,292,546)	152
40.0000	(1,866,842)(1,383,707)(320,971,518)	3,031	(42,152,379)	152
40.0000	(1,866,842)(1,389,698)(322,361,215)	3,004	(42,010,465)	152
40.0000	(1,866,842)(1,395,715)(323,756,930)	2,977	(41,866,794)	152
40.0000	(1,866,842)(1,401,758)(325,158,687)	2,949	(41,721,354)	152
40.0000	(1,866,842)(1,407,827)(326,566,514)	2,922	(41,574,133)	152
40.0000	(1,866,842)(1,413,922)(327,980,436)	2,893	(41,425,120)	152
40.0000	(1,866,842)(1,420,044)(329,400,480)	2,865	(41,274,302)	152
40.0000	(1,866,842)(1,426,192)(330,826,672)	2,836	(41,121,668)	152
40.0000	(1,866,842)(1,432,367)(332,259,039)	2,807	(40,967,206)	152
40.0000	(1,866,842)(1,438,569)(333,697,608)	2,778	(40,810,903)	152
40.0000	(1,866,842)(1,444,797)(335,142,405)	2,748	(40,652,748)	152
40.0000	(1,866,842)(1,451,053)(336,593,458)	2,718	(40,492,729)	152
40.0000	(1,866,842)(1,457,335)(338,050,793)	2,687	(40,330,833)	152
40.0000	(1,866,842)(1,463,645)(339,514,438)	2,657	(40,167,048)	152
40.0000	(1,866,842)(1,469,982)(340,984,421)	2,626	(40,001,361)	152
40.0000	(1,866,842)(1,476,347)(342,460,767)	2,595	(39,833,761)	152
40.0000	(1,866,842)(1,482,739)(343,943,506)	2,563	(39,664,234)	152
40.0000	(1,866,842)(1,489,159)(345,432,665)	2,531	(39,492,768)	152
40.0000	(1,866,842)(1,495,606)(346,928,271)	2,499	(39,319,351)	152
40.0000	(1,866,842)(1,502,082)(348,430,352)	2,466	(39,143,970)	152
40.0000	(1,866,842)(1,508,585)(349,938,937)	2,433	(38,966,612)	152
40.0000	(1,866,842)(1,515,117)(351,454,054)	2,400	(38,787,263)	152
40.0000	(1,866,842)(1,521,677)(352,975,731)	2,367	(38,605,912)	152
40.0000	(1,866,842)(1,528,265)(354,503,996)	2,333	(38,422,545)	152
40.0000	(1,866,842)(1,534,882)(356,038,878)	2,298	(38,237,149)	152
40.0000	(1,866,842)(1,541,527)(357,580,405)	2,264	(38,049,712)	152
40.0000	(1,866,842)(1,548,202)(359,128,607)	2,229	(37,860,219)	152
40.0000	(1,866,842)(1,554,905)(360,683,512)	2,194	(37,668,657)	152
40.0000	(1,866,842)(1,561,637)(362,245,149)	2,158	(37,475,014)	152
40.0000	(1,866,842)(1,568,398)(363,813,547)	2,122	(37,279,276)	152
40.0000	(1,866,842)(1,575,189)(365,388,736)	2,086	(37,081,428)	152
40.0000	(1,866,842)(1,582,009)(366,970,745)	2,049	(36,881,459)	152

40.0000	(1,866,842)(1,588,859)(368,559,604)	2,012	(36,679,353)	152
40.0000	(1,866,842)(1,595,738)(370,155,342)	1,975	(36,475,098)	152
40.0000	(1,866,842)(1,602,647)(371,757,989)	1,937	(36,268,679)	152
40.0000	(1,866,842)(1,609,586)(373,367,575)	1,899	(36,060,083)	152
40.0000	(1,866,842)(1,616,555)(374,984,129)	1,860	(35,849,295)	152
40.0000	(1,866,842)(1,623,554)(376,607,683)	1,821	(35,636,302)	152
40.0000	(1,866,842)(1,630,583)(378,238,267)	1,782	(35,421,090)	152
40.0000	(1,866,842)(1,637,643)(379,875,910)	1,743	(35,203,644)	152
40.0000	(1,866,842)(1,644,734)(381,520,644)	1,703	(34,983,950)	152
40.0000	(1,866,842)(1,651,855)(383,172,498)	1,662	(34,761,994)	152
40.0000	(1,866,842)(1,659,007)(384,831,505)	1,622	(34,537,761)	152
40.0000	(1,866,842)(1,666,190)(386,497,695)	1,581	(34,311,237)	152
40.0000	(1,866,842)(1,673,404)(388,171,099)	1,539	(34,082,408)	152
40.0000	(1,866,842)(1,680,649)(389,851,748)	1,497	(33,851,258)	152
40.0000	(1,866,842)(1,687,926)(391,539,673)	1,455	(33,617,773)	152
40.0000	(1,866,842)(1,695,234)(393,234,907)	1,412	(33,381,938)	152
40.0000	(1,866,842)(1,702,574)(394,937,481)	1,369	(33,143,738)	152
40.0000	(1,866,842)(1,709,945)(396,647,426)	1,326	(32,903,158)	152
40.0000	(1,866,842)(1,717,349)(398,364,774)	1,282	(32,660,184)	152
40.0000	(1,866,842)(1,724,784)(400,089,558)	1,238	(32,414,800)	152
40.0000	(1,866,842)(1,732,252)(401,821,810)	1,193	(32,166,990)	152
40.0000	(1,866,842)(1,739,752)(403,561,562)	1,148	(31,916,740)	152
40.0000	(1,866,842)(1,747,284)(405,308,847)	1,102	(31,664,035)	152
40.0000	(1,866,842)(1,754,850)(407,063,696)	1,056	(31,408,858)	152
40.0000	(1,866,842)(1,762,448)(408,826,144)	1,010	(31,151,194)	152
40.0000	(1,866,842)(1,770,078)(410,596,222)	963	(30,891,027)	152
40.0000	(1,866,842)(1,777,742)(412,373,964)	916	(30,628,342)	152
40.0000	(1,866,842)(1,785,439)(414,159,404)	868	(30,363,123)	152
40.0000	(1,866,842)(1,793,170)(415,952,573)	820	(30,095,355)	152
40.0000	(1,866,842)(1,800,933)(417,753,506)	772	(29,825,020)	152
40.0000	(1,866,842)(1,808,731)(419,562,237)	723	(29,552,103)	152
40.0000	(1,866,842)(1,816,562)(421,378,799)	674	(29,276,589)	152
40.0000	(1,866,842)(1,824,427)(423,203,226)	624	(28,998,459)	152
40.0000	(1,866,842)(1,832,326)(425,035,553)	574	(28,717,700)	152
40.0000	(1,866,842)(1,840,260)(426,875,812)	523	(28,434,293)	152
40.0000	(1,866,842)(1,848,227)(428,724,039)	472	(28,148,222)	152
40.0000	(1,866,842)(1,856,229)(430,580,269)	420	(27,859,471)	152
40.0000	(1,866,842)(1,864,266)(432,444,535)	368	(27,568,023)	152
40.0000	(1,866,842)(1,872,338)(434,316,873)	316	(27,273,862)	152
40.0000	(1,866,842)(1,880,445)(436,197,318)	263	(26,976,970)	152
40.0000	(1,866,842)(1,888,586)(438,085,904)	209	(26,677,331)	152
40.0000	(1,866,842)(1,896,763)(439,982,667)	155	(26,374,927)	152
40.0000	(1,866,842)(1,904,975)(441,887,642)	101	(26,069,741)	152
40.0000	(1,866,842)(1,913,223)(443,800,866)	46	(25,761,757)	152
40.0000	(1,866,842)(1,921,507)(445,722,373)	(9)	(25,450,956)	152
40.0000	(1,866,842)(1,929,826)(447,652,199)	(65)	(25,137,321)	152
40.0000	(1,866,842)(1,938,182)(449,590,381)	(121)	(24,820,836)	152
40.0000	(1,866,842)(1,946,574)(451,536,955)	(178)	(24,501,481)	152
40.0000	(1,866,842)(1,955,002)(453,491,957)	(235)	(24,179,241)	152
40.0000	(1,866,842)(1,963,466)(455,455,423)	(293)	(23,854,095)	152
40.0000	(1,866,842)(1,971,967)(457,427,390)	(351)	(23,526,028)	152
40.0000	(1,866,842)(1,980,505)(459,407,895)	(410)	(23,195,021)	152
40.0000	(1,866,842)(1,989,080)(461,396,975)	(469)	(22,861,055)	152
40.0000	(1,866,842)(1,997,692)(463,394,667)	(529)	(22,524,113)	152
40.0000	(1,866,842)(2,006,342)(465,401,009)	(589)	(22,184,176)	152
40.0000	(1,866,842)(2,015,028)(467,416,037)	(650)	(21,841,227)	152

40.0000	(1,866,842)(2,023,753)(469,439,790)	(711)	(21,495,245)	152
40.0000	(1,866,842)(2,032,515)(471,472,305)	(773)	(21,146,214)	152
40.0000	(1,866,842)(2,041,315)(473,513,620)	(835)	(20,794,114)	152
40.0000	(1,866,842)(2,050,153)(475,563,773)	(898)	(20,438,926)	152
40.0000	(1,866,842)(2,059,030)(477,622,802)	(961)	(20,080,632)	152
40.0000	(1,866,842)(2,067,944)(479,690,747)	(1,025)	(19,719,212)	152
40.0000	(1,866,842)(2,076,898)(481,767,645)	(1,090)	(19,354,648)	152
40.0000	(1,866,842)(2,085,890)(483,853,535)	(1,155)	(18,986,920)	152
40.0000	(1,866,842)(2,094,921)(485,948,457)	(1,220)	(18,616,009)	152
40.0000	(1,866,842)(2,103,992)(488,052,448)	(1,286)	(18,241,896)	152
40.0000	(1,866,842)(2,113,101)(490,165,550)	(1,353)	(17,864,561)	152
40.0000	(1,866,842)(2,122,250)(492,287,800)	(1,420)	(17,483,985)	152
40.0000	(1,866,842)(2,131,439)(494,419,239)	(1,488)	(17,100,147)	152
40.0000	(1,866,842)(2,140,667)(496,559,906)	(1,556)	(16,713,029)	152
40.0000	(1,866,842)(2,149,936)(498,709,842)	(1,625)	(16,322,610)	152
40.0000	(1,866,842)(2,159,244)(500,869,086)	(1,694)	(15,928,870)	152
40.0000	(1,866,842)(2,168,593)(503,037,679)	(1,764)	(15,531,789)	152
40.0000	(1,866,842)(2,177,982)(505,215,661)	(1,835)	(15,131,346)	152
40.0000	(1,866,842)(2,187,412)(507,403,074)	(1,906)	(14,727,523)	152
40.0000	(1,866,842)(2,196,883)(509,599,957)	(1,978)	(14,320,297)	152
40.0000	(1,866,842)(2,206,395)(511,806,351)	(2,050)	(13,909,648)	152
40.0000	(1,866,842)(2,215,948)(514,022,299)	(2,123)	(13,495,557)	152
40.0000	(1,866,842)(2,225,542)(516,247,841)	(2,196)	(13,078,001)	152
40.0000	(1,866,842)(2,235,178)(518,483,019)	(2,270)	(12,656,961)	152
40.0000	(1,866,842)(2,244,855)(520,727,874)	(2,345)	(12,232,415)	152
40.0000	(1,866,842)(2,254,575)(522,982,449)	(2,420)	(11,804,341)	152
40.0000	(1,866,842)(2,264,336)(525,246,785)	(2,496)	(11,372,720)	152
40.0000	(1,866,842)(2,274,140)(527,520,925)	(2,573)	(10,937,529)	152
40.0000	(1,866,842)(2,283,986)(529,804,912)	(2,650)	(10,498,747)	152
40.0000	(1,866,842)(2,293,875)(532,098,787)	(2,728)	(10,056,352)	152
40.0000	(1,866,842)(2,303,807)(534,402,594)	(2,806)	(9,610,324)	152
40.0000	(1,866,842)(2,313,782)(536,716,376)	(2,885)	(9,160,639)	152
40.0000	(1,866,842)(2,323,800)(539,040,175)	(2,965)	(8,707,276)	152
40.0000	(1,866,842)(2,333,861)(541,374,036)	(3,045)	(8,250,214)	152
40.0000	(1,866,842)(2,343,966)(543,718,002)	(3,126)	(7,789,429)	152
40.0000	(1,866,842)(2,354,114)(546,072,116)	(3,207)	(7,324,900)	152
40.0000	(1,866,842)(2,364,307)(548,436,423)	(3,289)	(6,856,604)	152
40.0000	(1,866,842)(2,374,543)(550,810,966)	(3,372)	(6,384,520)	152
40.0000	(1,866,842)(2,384,824)(553,195,791)	(3,456)	(5,908,623)	152
40.0000	(1,866,842)(2,395,150)(555,590,941)	(3,540)	(5,428,892)	152
40.0000	(1,866,842)(2,405,520)(557,996,461)	(3,625)	(4,945,303)	152
40.0000	(1,866,842)(2,415,935)(560,412,396)	(3,710)	(4,457,834)	152
40.0000	(1,866,842)(2,426,395)(562,838,791)	(3,796)	(3,966,462)	152
40.0000	(1,866,842)(2,436,901)(565,275,692)	(3,883)	(3,471,163)	152
40.0000	(1,866,842)(2,447,452)(567,723,144)	(3,971)	(2,971,913)	152
40.0000	(1,866,842)(2,458,048)(570,181,192)	(4,059)	(2,468,691)	152
40.0000	(1,866,842)(3,062,859)(229,745,097)	2,599	(994,718)	122
40.0000	(1,866,842) (994,718)(230,739,815)	2,581	(999,025)	152
40.0000	(1,866,842) (999,025)(231,738,840)	2,563	(1,003,350)	152
40.0000	(1,866,842)(1,003,350)(232,742,190)	2,545	(1,007,695)	152
40.0000	(1,866,842)(1,007,695)(233,749,885)	2,527	(1,012,058)	152
40.0000	(1,866,842)(1,012,058)(234,761,943)	2,509	(1,016,439)	152
40.0000	(1,866,842)(1,016,439)(235,778,382)	2,491	(1,020,840)	152
40.0000	(1,866,842)(1,020,840)(236,799,222)	2,472	(1,025,260)	152
40.0000	(1,866,842)(1,025,260)(237,824,483)	2,453	(1,029,699)	152
40.0000	(1,866,842)(1,029,699)(238,854,182)	2,434	(1,034,157)	152

0.0000	(1,866,842)(1,034,157)(239,888,339)	2,415	(1,038,635)	152
0.0000	(1,866,842)(1,038,635)(240,926,974)	2,395	(1,043,132)	152
0.0000	(1,866,842)(1,043,132)(241,970,106)	2,375	(1,047,648)	152
0.0000	(1,866,842)(1,047,648)(243,017,755)	2,355	(1,052,184)	152
0.0000	(1,866,842)(1,052,184)(244,069,939)	2,335	(1,056,740)	152
0.0000	(1,866,842)(1,056,740)(245,126,679)	2,315	(1,061,315)	152
0.0000	(1,866,842)(1,061,315)(246,187,994)	2,294	(1,065,910)	152
0.0000	(1,866,842)(1,065,910)(247,253,904)	2,273	(1,070,525)	152
0.0000	(1,866,842)(1,070,525)(248,324,430)	2,252	(1,075,160)	152
0.0000	(1,866,842)(1,075,160)(249,399,590)	2,231	(1,079,816)	152
0.0000	(1,866,842)(1,079,816)(250,479,406)	2,209	(1,084,491)	152
0.0000	(1,866,842)(1,084,491)(251,563,897)	2,187	(1,089,186)	152
0.0000	(1,866,842)(1,089,186)(252,653,083)	2,165	(1,093,902)	152
0.0000	(1,866,842)(1,093,902)(253,746,985)	2,143	(1,098,638)	152
0.0000	(1,866,842)(1,098,638)(254,845,623)	2,121	(1,103,395)	152
0.0000	(1,866,842)(1,103,395)(255,949,018)	2,098	(1,108,172)	152
0.0000	(1,866,842)(1,108,172)(257,057,190)	2,075	(1,112,970)	152
0.0000	(1,866,842)(1,112,970)(258,170,161)	2,052	(1,117,789)	152
0.0000	(1,866,842)(1,117,789)(259,287,950)	2,029	(1,122,629)	152
0.0000	(1,866,842)(1,122,629)(260,410,579)	2,005	(1,127,489)	152
0.0000	(1,866,842)(1,127,489)(261,538,068)	1,981	(1,132,371)	152
0.0000	(1,866,842)(1,132,371)(262,670,439)	1,957	(1,137,274)	152
0.0000	(1,866,842)(1,137,274)(263,807,713)	1,932	(1,142,198)	152
0.0000	(1,866,842)(1,142,198)(264,949,910)	1,908	(1,147,143)	152
0.0000	(1,866,842)(1,147,143)(266,097,054)	1,883	(1,152,110)	152
0.0000	(1,866,842)(1,152,110)(267,249,163)	1,858	(1,157,098)	152
0.0000	(1,866,842)(1,157,098)(268,406,261)	1,832	(1,162,108)	152
0.0000	(1,866,842)(1,162,108)(269,568,369)	1,807	(1,167,139)	152
0.0000	(1,866,842)(1,167,139)(270,735,509)	1,781	(1,172,193)	152
0.0000	(1,866,842)(1,172,193)(271,907,702)	1,755	(1,177,268)	152
0.0000	(1,866,842)(1,177,268)(273,084,970)	1,728	(1,182,365)	152
0.0000	(1,866,842)(1,182,365)(274,267,335)	1,702	(1,187,484)	152
0.0000	(1,866,842)(1,187,484)(275,454,819)	1,675	(1,192,626)	152
0.0000	(1,866,842)(1,192,626)(276,647,445)	1,648	(1,197,789)	152
0.0000	(1,866,842)(1,197,789)(277,845,234)	1,620	(1,202,975)	152
0.0000	(1,866,842)(1,202,975)(279,048,210)	1,592	(1,208,184)	152
0.0000	(1,866,842)(1,208,184)(280,256,394)	1,564	(1,213,415)	152
0.0000	(1,866,842)(1,213,415)(281,469,809)	1,536	(1,218,669)	152
0.0000	(1,866,842)(1,218,669)(282,688,478)	1,508	(1,223,945)	152
0.0000	(1,866,842)(1,223,945)(283,912,423)	1,479	(1,229,244)	152
0.0000	(1,866,842)(1,229,244)(285,141,667)	1,450	(1,234,567)	152
0.0000	(1,866,842)(1,234,567)(286,376,234)	1,420	(1,239,912)	152
0.0000	(1,866,842)(1,239,912)(287,616,145)	1,391	(1,245,280)	152
0.0000	(1,866,842)(1,245,280)(288,861,426)	1,361	(1,250,672)	152
0.0000	(1,866,842)(1,250,672)(290,112,097)	1,330	(1,256,087)	152
0.0000	(1,866,842)(1,256,087)(291,368,184)	1,300	(1,261,525)	152
0.0000	(1,866,842)(1,261,525)(292,629,710)	1,269	(1,266,987)	152
0.0000	(1,866,842)(1,266,987)(293,896,697)	1,238	(1,272,473)	152
0.0000	(1,866,842)(1,272,473)(295,169,170)	1,206	(1,277,982)	152
0.0000	(1,866,842)(1,277,982)(296,447,152)	1,175	(1,283,515)	152
0.0000	(1,866,842)(1,283,515)(297,730,667)	1,143	(1,289,073)	152
0.0000	(1,866,842)(1,289,073)(299,019,740)	1,111	(1,294,654)	152
0.0000	(1,866,842)(1,294,654)(300,314,394)	1,078	(1,300,259)	152
0.0000	(1,866,842)(1,300,259)(301,614,653)	1,045	(1,305,889)	152
0.0000	(1,866,842)(1,305,889)(302,920,542)	1,012	(1,311,543)	152
0.0000	(1,866,842)(1,311,543)(304,232,085)	978	(1,317,222)	152

0.0000	(1,866,842)(1,317,222)(305,549,307)	944	(1,322,925)	152
0.0000	(1,866,842)(1,322,925)(306,872,232)	910	(1,328,653)	152
0.0000	(1,866,842)(1,328,653)(308,200,884)	876	(1,334,405)	152
0.0000	(1,866,842)(1,334,405)(309,535,289)	841	(1,340,183)	152
0.0000	(1,866,842)(1,340,183)(310,875,472)	806	(1,345,985)	152
0.0000	(1,866,842)(1,345,985)(312,221,457)	771	(1,351,813)	152
0.0000	(1,866,842)(1,351,813)(313,573,270)	735	(1,357,666)	152
0.0000	(1,866,842)(1,357,666)(314,930,936)	699	(1,363,544)	152
0.0000	(1,866,842)(1,363,544)(316,294,480)	663	(1,369,448)	152
0.0000	(1,866,842)(1,369,448)(317,663,927)	626	(1,375,377)	152
0.0000	(1,866,842)(1,375,377)(319,039,304)	589	(1,381,332)	152
0.0000	(1,866,842)(1,381,332)(320,420,636)	552	(1,387,313)	152
0.0000	(1,866,842)(1,387,313)(321,807,949)	514	(1,393,319)	152
0.0000	(1,866,842)(1,393,319)(323,201,268)	476	(1,399,352)	152
0.0000	(1,866,842)(1,399,352)(324,600,619)	437	(1,405,410)	152
0.0000	(1,866,842)(1,405,410)(326,006,030)	399	(1,411,495)	152
0.0000	(1,866,842)(1,411,495)(327,417,525)	360	(1,417,607)	152
0.0000	(1,866,842)(1,417,607)(328,835,132)	320	(1,423,744)	152
0.0000	(1,866,842)(1,423,744)(330,258,876)	281	(1,429,909)	152
0.0000	(1,866,842)(1,429,909)(331,688,785)	240	(1,436,100)	152
0.0000	(1,866,842)(1,436,100)(333,124,885)	200	(1,442,318)	152
0.0000	(1,866,842)(1,442,318)(334,567,202)	159	(1,448,562)	152
0.0000	(1,866,842)(1,448,562)(336,015,765)	118	(1,454,834)	152
0.0000	(1,866,842)(1,454,834)(337,470,599)	77	(1,461,133)	152
0.0000	(1,866,842)(1,461,133)(338,931,732)	35	(1,467,459)	152
0.0000	(1,866,842)(1,467,459)(340,399,191)	(8)	(1,473,813)	152
0.0000	(1,866,842)(1,473,813)(341,873,004)	(50)	(1,480,194)	152
0.0000	(1,866,842)(1,480,194)(343,353,198)	(93)	(1,486,603)	152
0.0000	(1,866,842)(1,486,603)(344,839,801)	(136)	(1,493,039)	152
0.0000	(1,866,842)(1,493,039)(346,332,840)	(180)	(1,499,504)	152
0.0000	(1,866,842)(1,499,504)(347,832,343)	(224)	(1,505,996)	152
0.0000	(1,866,842)(1,505,996)(349,338,339)	(269)	(1,512,516)	152
0.0000	(1,866,842)(1,512,516)(350,850,856)	(314)	(1,519,065)	152
0.0000	(1,866,842)(1,519,065)(352,369,921)	(359)	(1,525,642)	152
0.0000	(1,866,842)(1,525,642)(353,895,563)	(405)	(1,532,248)	152
0.0000	(1,866,842)(1,532,248)(355,427,810)	(451)	(1,538,882)	152
0.0000	(1,866,842)(1,538,882)(356,966,692)	(497)	(1,545,545)	152
0.0000	(1,866,842)(1,545,545)(358,512,237)	(544)	(1,552,236)	152
0.0000	(1,866,842)(1,552,236)(360,064,473)	(591)	(1,558,957)	152
0.0000	(1,866,842)(1,558,957)(361,623,430)	(639)	(1,565,707)	152
0.0000	(1,866,842)(1,565,707)(363,189,136)	(687)	(1,572,486)	152
0.0000	(1,866,842)(1,572,486)(364,761,622)	(735)	(1,579,294)	152
0.0000	(1,866,842)(1,579,294)(366,340,916)	(784)	(1,586,132)	152
0.0000	(1,866,842)(1,586,132)(367,927,047)	(833)	(1,592,999)	152
0.0000	(1,866,842)(1,592,999)(369,520,047)	(883)	(1,599,896)	152
0.0000	(1,866,842)(1,599,896)(371,119,943)	(933)	(1,606,823)	152
0.0000	(1,866,842)(1,606,823)(372,726,766)	(983)	(1,613,780)	152
0.0000	(1,866,842)(1,613,780)(374,340,546)	(1,034)	(1,620,767)	152
0.0000	(1,866,842)(1,620,767)(375,961,314)	(1,085)	(1,627,785)	152
0.0000	(1,866,842)(1,627,785)(377,589,099)	(1,137)	(1,634,833)	152
0.0000	(1,866,842)(1,634,833)(379,223,931)	(1,189)	(1,641,911)	152
0.0000	(1,866,842)(1,641,911)(380,865,842)	(1,242)	(1,649,020)	152
0.0000	(1,866,842)(1,649,020)(382,514,862)	(1,295)	(1,656,159)	152
0.0000	(1,866,842)(1,656,159)(384,171,021)	(1,348)	(1,663,330)	152
0.0000	(1,866,842)(1,663,330)(385,834,351)	(1,402)	(1,670,532)	152
0.0000	(1,866,842)(1,670,532)(387,504,883)	(1,456)	(1,677,765)	152

0.0000	(1,866,842)(1,677,765)(389,182,647)	(1,511)	(1,685,029)	152
0.0000	(1,866,842)(1,685,029)(390,867,676)	(1,566)	(1,692,324)	152
0.0000	(1,866,842)(1,692,324)(392,560,000)	(1,622)	(1,699,651)	152
0.0000	(1,866,842)(1,699,651)(394,259,652)	(1,678)	(1,707,010)	152
0.0000	(1,866,842)(1,707,010)(395,966,662)	(1,735)	(1,714,401)	152
0.0000	(1,866,842)(1,714,401)(397,681,063)	(1,792)	(1,721,824)	152
0.0000	(1,866,842)(1,721,824)(399,402,887)	(1,849)	(1,729,279)	152
0.0000	(1,866,842)(1,729,279)(401,132,166)	(1,907)	(1,736,766)	152
0.0000	(1,866,842)(1,736,766)(402,868,932)	(1,966)	(1,744,286)	152
0.0000	(1,866,842)(1,744,286)(404,613,218)	(2,025)	(1,751,838)	152
0.0000	(1,866,842)(1,751,838)(406,365,055)	(2,084)	(1,759,423)	152
0.0000	(1,866,842)(1,759,423)(408,124,478)	(2,144)	(1,767,040)	152
0.0000	(1,866,842)(1,767,040)(409,891,518)	(2,204)	(1,774,691)	152
0.0000	(1,866,842)(1,774,691)(411,666,209)	(2,265)	(1,782,375)	152
0.0000	(1,866,842)(1,782,375)(413,448,584)	(2,326)	(1,790,092)	152
0.0000	(1,866,842)(1,790,092)(415,238,676)	(2,388)	(1,797,842)	152
0.0000	(1,866,842)(1,797,842)(417,036,519)	(2,450)	(1,805,626)	152
0.0000	(1,866,842)(1,805,626)(418,842,145)	(2,513)	(1,813,444)	152
0.0000	(1,866,842)(1,813,444)(420,655,589)	(2,576)	(1,821,296)	152
0.0000	(1,866,842)(1,821,296)(422,476,885)	(2,640)	(1,829,181)	152
0.0000	(1,866,842)(1,829,181)(424,306,067)	(2,704)	(1,837,101)	152
0.0000	(1,866,842)(1,837,101)(426,143,168)	(2,769)	(1,845,055)	152
0.0000	(1,866,842)(1,845,055)(427,988,223)	(2,834)	(1,853,044)	152
0.0000	(1,866,842)(1,853,044)(429,841,266)	(2,900)	(1,861,067)	152
0.0000	(1,866,842)(1,861,067)(431,702,333)	(2,966)	(1,869,124)	152
0.0000	(1,866,842)(1,869,124)(433,571,458)	(3,033)	(1,877,217)	152
0.0000	(1,866,842)(1,877,217)(435,448,675)	(3,101)	(1,885,345)	152
0.0000	(1,866,842)(1,885,345)(437,334,020)	(3,169)	(1,893,508)	152
0.0000	(1,866,842)(1,893,508)(439,227,527)	(3,237)	(1,901,706)	152
0.0000	(1,866,842)(1,901,706)(441,129,233)	(3,306)	(1,909,940)	152
0.0000	(1,866,842)(1,909,940)(443,039,173)	(3,375)	(1,918,209)	152
0.0000	(1,866,842)(1,918,209)(444,957,382)	(3,445)	(1,926,514)	152
0.0000	(1,866,842)(1,926,514)(446,883,897)	(3,516)	(1,934,855)	152
0.0000	(1,866,842)(1,934,855)(448,818,752)	(3,587)	(1,943,233)	152
0.0000	(1,866,842)(1,943,233)(450,761,985)	(3,659)	(1,951,646)	152
0.0000	(1,866,842)(1,951,646)(452,713,631)	(3,731)	(1,960,096)	152
0.0000	(1,866,842)(1,960,096)(454,673,727)	(3,804)	(1,968,583)	152
0.0000	(1,866,842)(1,968,583)(456,642,310)	(3,877)	(1,977,106)	152
0.0000	(1,866,842)(1,977,106)(458,619,416)	(3,951)	(1,985,666)	152
0.0000	(1,866,842)(1,985,666)(460,605,082)	(4,026)	(1,994,264)	152
0.0000	(1,866,842)(1,994,264)(462,599,346)	(4,101)	(2,002,898)	152
0.0000	(1,866,842)(2,002,898)(464,602,244)	(4,176)	(2,011,570)	152
0.0000	(1,866,842)(2,011,570)(466,613,814)	(4,252)	(2,020,279)	152
0.0000	(1,866,842)(2,020,279)(468,634,093)	(4,329)	(2,029,026)	152
0.0000	(1,866,842)(2,029,026)(470,663,120)	(4,406)	(2,037,811)	152
0.0000	(1,866,842)(2,037,811)(472,700,931)	(4,484)	(2,046,634)	152
0.0000	(1,866,842)(2,046,634)(474,747,566)	(4,563)	(2,055,496)	152
0.0000	(1,866,842)(2,055,496)(476,803,061)	(4,642)	(2,064,395)	152
0.0000	(1,866,842)(2,064,395)(478,867,457)	(4,722)	(2,073,333)	152
0.0000	(1,866,842)(2,073,333)(480,940,790)	(4,802)	(2,082,310)	152
0.0000	(1,866,842)(2,082,310)(483,023,100)	(4,883)	(2,091,326)	152
0.0000	(1,866,842)(2,091,326)(485,114,426)	(4,965)	(2,100,381)	152
0.0000	(1,866,842)(2,100,381)(487,214,807)	(5,047)	(2,109,475)	152
0.0000	(1,866,842)(2,109,475)(489,324,281)	(5,130)	(2,118,608)	152
0.0000	(1,866,842)(2,118,608)(491,442,889)	(5,213)	(2,127,781)	152
0.0000	(1,866,842)(2,127,781)(493,570,670)	(5,297)	(2,136,993)	152

0.0000	(1,866,842)	(2,136,993)(495,707,663)	(5,382)	(2,146,246)	152
0.0000	(1,866,842)	(2,146,246)(497,853,909)	(5,467)	(2,155,538)	152
0.0000	(1,866,842)	(2,155,538)(500,009,448)	(5,553)	(2,164,871)	152
0.0000	(1,866,842)	(1,565,891)(163,676,911)	1,191	(708,665)	210
0.0000	(1,866,842)	(708,665)(164,385,576)	1,176	(711,734)	152
0.0000	(1,866,842)	(711,734)(165,097,310)	1,161	(714,815)	152
0.0000	(1,866,842)	(714,815)(165,812,125)	1,145	(717,910)	152
0.0000	(1,866,842)	(717,910)(166,530,035)	1,129	(721,018)	152
0.0000	(1,866,842)	(721,018)(167,251,054)	1,113	(724,140)	152
0.0000	(1,866,842)	(724,140)(167,975,194)	1,097	(727,276)	152
0.0000	(1,866,842)	(727,276)(168,702,470)	1,081	(730,424)	152
0.0000	(1,866,842)	(730,424)(169,432,894)	1,064	(733,587)	152
0.0000	(1,866,842)	(733,587)(170,166,481)	1,048	(736,763)	152
0.0000	(1,866,842)	(736,763)(170,903,244)	1,031	(739,953)	152
0.0000	(1,866,842)	(739,953)(171,643,197)	1,014	(743,157)	152
0.0000	(1,866,842)	(743,157)(172,386,354)	997	(746,374)	152
0.0000	(1,866,842)	(746,374)(173,132,728)	980	(749,606)	152
0.0000	(1,866,842)	(749,606)(173,882,334)	962	(752,851)	152
0.0000	(1,866,842)	(752,851)(174,635,185)	945	(756,111)	152
0.0000	(1,866,842)	(756,111)(175,391,297)	927	(759,385)	152
0.0000	(1,866,842)	(759,385)(176,150,681)	909	(762,673)	152
0.0000	(1,866,842)	(762,673)(176,913,354)	891	(765,975)	152
0.0000	(1,866,842)	(765,975)(177,679,329)	873	(769,291)	152
0.0000	(1,866,842)	(769,291)(178,448,620)	854	(772,622)	152
0.0000	(1,866,842)	(772,622)(179,221,242)	836	(775,967)	152
0.0000	(1,866,842)	(775,967)(179,997,209)	817	(779,327)	152
0.0000	(1,866,842)	(779,327)(180,776,535)	798	(782,701)	152
0.0000	(1,866,842)	(782,701)(181,559,236)	779	(786,090)	152
0.0000	(1,866,842)	(786,090)(182,345,326)	759	(789,493)	152
0.0000	(1,866,842)	(789,493)(183,134,820)	740	(792,912)	152
0.0000	(1,866,842)	(792,912)(183,927,731)	720	(796,345)	152
0.0000	(1,866,842)	(796,345)(184,724,076)	700	(799,793)	152
0.0000	(1,866,842)	(799,793)(185,523,868)	680	(803,255)	152
0.0000	(1,866,842)	(803,255)(186,327,124)	660	(806,733)	152
0.0000	(1,866,842)	(806,733)(187,133,857)	640	(810,226)	152
0.0000	(1,866,842)	(810,226)(187,944,083)	619	(813,734)	152
0.0000	(1,866,842)	(813,734)(188,757,817)	598	(817,257)	152
0.0000	(1,866,842)	(817,257)(189,575,074)	577	(820,796)	152
0.0000	(1,866,842)	(820,796)(190,395,870)	556	(824,349)	152
0.0000	(1,866,842)	(824,349)(191,220,219)	534	(827,919)	152
0.0000	(1,866,842)	(827,919)(192,048,138)	513	(831,503)	152
0.0000	(1,866,842)	(831,503)(192,879,641)	491	(835,103)	152
0.0000	(1,866,842)	(835,103)(193,714,744)	469	(838,719)	152
0.0000	(1,866,842)	(838,719)(194,553,463)	447	(842,350)	152
0.0000	(1,866,842)	(842,350)(195,395,814)	425	(845,998)	152
0.0000	(1,866,842)	(845,998)(196,241,811)	402	(849,660)	152
0.0000	(1,866,842)	(849,660)(197,091,472)	379	(853,339)	152
0.0000	(1,866,842)	(853,339)(197,944,811)	356	(857,034)	152
0.0000	(1,866,842)	(857,034)(198,801,845)	333	(860,744)	152
0.0000	(1,866,842)	(860,744)(199,662,589)	309	(864,471)	152
0.0000	(1,866,842)	(864,471)(200,527,060)	286	(868,214)	152
0.0000	(1,866,842)	(868,214)(201,395,274)	262	(871,973)	152
0.0000	(1,866,842)	(871,973)(202,267,247)	238	(875,748)	152
0.0000	(1,866,842)	(875,748)(203,142,996)	214	(879,540)	152
0.0000	(1,866,842)	(879,540)(204,022,536)	189	(883,348)	152
0.0000	(1,866,842)	(883,348)(204,905,884)	164	(887,173)	152

0.0000	(1,866,842)	(887,173)	(205,793,057)	140	(891,014)	152
0.0000	(1,866,842)	(891,014)	(206,684,071)	114	(894,872)	152
0.0000	(1,866,842)	(894,872)	(207,578,943)	89	(898,746)	152
0.0000	(1,866,842)	(898,746)	(208,477,689)	63	(902,638)	152
0.0000	(1,866,842)	(902,638)	(209,380,327)	38	(906,546)	152
0.0000	(1,866,842)	(906,546)	(210,286,873)	12	(910,471)	152
0.0000	(1,866,842)	(910,471)	(211,197,343)	(15)	(914,413)	152
0.0000	(1,866,842)	(914,413)	(212,111,756)	(41)	(918,372)	152
0.0000	(1,866,842)	(918,372)	(213,030,128)	(68)	(922,348)	152
0.0000	(1,866,842)	(922,348)	(213,952,476)	(95)	(926,342)	152
0.0000	(1,866,842)	(926,342)	(214,878,818)	(122)	(930,352)	152
0.0000	(1,866,842)	(930,352)	(215,809,170)	(149)	(934,380)	152
0.0000	(1,866,842)	(934,380)	(216,743,550)	(177)	(938,426)	152
0.0000	(1,866,842)	(938,426)	(217,681,976)	(205)	(942,489)	152
0.0000	(1,866,842)	(942,489)	(218,624,465)	(233)	(946,570)	152
0.0000	(1,866,842)	(946,570)	(219,571,035)	(261)	(950,668)	152
0.0000	(1,866,842)	(950,668)	(220,521,703)	(290)	(954,784)	152
0.0000	(1,866,842)	(954,784)	(221,476,487)	(319)	(958,918)	152
0.0000	(1,866,842)	(958,918)	(222,435,405)	(348)	(963,070)	152
0.0000	(1,866,842)	(963,070)	(223,398,475)	(377)	(967,240)	152
0.0000	(1,866,842)	(967,240)	(224,365,714)	(407)	(971,427)	152
0.0000	(1,866,842)	(971,427)	(225,337,142)	(437)	(975,633)	152
0.0000	(1,866,842)	(975,633)	(226,312,775)	(467)	(979,857)	152
0.0000	(1,866,842)	(979,857)	(227,292,632)	(497)	(984,100)	152
0.0000	(1,866,842)	(984,100)	(228,276,732)	(527)	(988,361)	152
0.0000	(1,866,842)	(988,361)	(229,265,093)	(558)	(992,640)	152
0.0000	(1,866,842)	(992,640)	(230,257,733)	(589)	(996,938)	152
0.0000	(1,866,842)	(996,938)	(231,254,671)	(621)	(1,001,254)	152
0.0000	(1,866,842)	(1,001,254)	(232,255,925)	(652)	(1,005,589)	152
0.0000	(1,866,842)	(1,005,589)	(233,261,514)	(684)	(1,009,943)	152
0.0000	(1,866,842)	(1,009,943)	(234,271,457)	(716)	(1,014,316)	152
0.0000	(1,866,842)	(1,014,316)	(235,285,773)	(749)	(1,018,707)	152
0.0000	(1,866,842)	(1,018,707)	(236,304,480)	(781)	(1,023,118)	152
0.0000	(1,866,842)	(1,023,118)	(237,327,599)	(814)	(1,027,548)	152
0.0000	(1,866,842)	(1,027,548)	(238,355,146)	(848)	(1,031,997)	152
0.0000	(1,866,842)	(1,031,997)	(239,387,143)	(881)	(1,036,465)	152
0.0000	(1,866,842)	(1,036,465)	(240,423,608)	(915)	(1,040,953)	152
0.0000	(1,866,842)	(1,040,953)	(241,464,561)	(949)	(1,045,460)	152
0.0000	(1,866,842)	(1,045,460)	(242,510,020)	(983)	(1,049,986)	152
0.0000	(1,866,842)	(1,049,986)	(243,560,006)	(1,018)	(1,054,532)	152
0.0000	(1,866,842)	(1,054,532)	(244,614,538)	(1,053)	(1,059,098)	152
0.0000	(1,866,842)	(1,059,098)	(245,673,636)	(1,088)	(1,063,683)	152
0.0000	(1,866,842)	(1,063,683)	(246,737,320)	(1,123)	(1,068,289)	152
0.0000	(1,866,842)	(1,068,289)	(247,805,609)	(1,159)	(1,072,914)	152
0.0000	(1,866,842)	(1,072,914)	(248,878,523)	(1,195)	(1,077,559)	152
0.0000	(1,866,842)	(1,077,559)	(249,956,082)	(1,231)	(1,082,225)	152
0.0000	(1,866,842)	(1,082,225)	(251,038,307)	(1,268)	(1,086,911)	152
0.0000	(1,866,842)	(1,086,911)	(252,125,218)	(1,305)	(1,091,617)	152
0.0000	(1,866,842)	(1,091,617)	(253,216,834)	(1,342)	(1,096,343)	152
0.0000	(1,866,842)	(1,096,343)	(254,313,177)	(1,379)	(1,101,090)	152
0.0000	(1,866,842)	(1,101,090)	(255,414,267)	(1,417)	(1,105,857)	152
0.0000	(1,866,842)	(1,105,857)	(256,520,124)	(1,455)	(1,110,645)	152
0.0000	(1,866,842)	(1,110,645)	(257,630,769)	(1,494)	(1,115,454)	152
0.0000	(1,866,842)	(1,115,454)	(258,746,222)	(1,532)	(1,120,283)	152
0.0000	(1,866,842)	(1,120,283)	(259,866,506)	(1,571)	(1,125,134)	152
0.0000	(1,866,842)	(1,125,134)	(260,991,639)	(1,611)	(1,130,005)	152

0.0000 (1,866,842)(1,130,005)(262,121,645) (1,650) (1,134,898) 152
0.0000 (1,866,842)(1,134,898)(263,256,542) (1,690) (1,139,811) 152
0.0000 (1,866,842)(1,139,811)(264,396,354) (1,730) (1,144,746) 152
0.0000 (1,866,842)(1,144,746)(265,541,100) (1,771) (1,149,703) 152
0.0000 (1,866,842)(1,149,703)(266,690,803) (1,812) (1,154,681) 152
0.0000 (1,866,842)(1,154,681)(267,845,483) (1,853) (1,159,680) 152
0.0000 (1,866,842)(1,159,680)(269,005,163) (1,895) (1,164,701) 152
0.0000 (1,866,842)(1,164,701)(270,169,864) (1,936) (1,169,744) 152
0.0000 (1,866,842)(1,169,744)(271,339,608) (1,979) (1,174,808) 152
0.0000 (1,866,842)(1,174,808)(272,514,416) (2,021) (1,179,895) 152
0.0000 (1,866,842)(1,179,895)(273,694,311) (2,064) (1,185,003) 152
0.0000 (1,866,842)(1,185,003)(274,879,315) (2,107) (1,190,134) 152
0.0000 (1,866,842)(1,190,134)(276,069,449) (2,151) (1,195,287) 152
0.0000 (1,866,842)(1,195,287)(277,264,736) (2,194) (1,200,462) 152
0.0000 (1,866,842)(1,200,462)(278,465,198) (2,239) (1,205,660) 152
0.0000 (1,866,842)(1,205,660)(279,670,857) (2,283) (1,210,880) 152
0.0000 (1,866,842)(1,210,880)(280,881,737) (2,328) (1,216,123) 152
0.0000 (1,866,842)(1,216,123)(282,097,860) (2,373) (1,221,388) 152
0.0000 (1,866,842)(1,221,388)(283,319,248) (2,419) (1,226,676) 152
0.0000 (1,866,842)(1,226,676)(284,545,924) (2,465) (1,231,987) 152
0.0000 (1,866,842)(1,231,987)(285,777,911) (2,511) (1,237,321) 152
0.0000 (1,866,842)(1,237,321)(287,015,232) (2,558) (1,242,678) 152
0.0000 (1,866,842)(1,242,678)(288,257,911) (2,605) (1,248,059) 152
0.0000 (1,866,842)(1,248,059)(289,505,970) (2,652) (1,253,463) 152
0.0000 (1,866,842)(1,253,463)(290,759,432) (2,700) (1,258,890) 152
0.0000 (1,866,842)(1,258,890)(292,018,322) (2,748) (1,264,340) 152
0.0000 (1,866,842)(1,264,340)(293,282,662) (2,796) (1,269,814) 152
0.0000 (1,866,842)(1,269,814)(294,552,476) (2,845) (1,275,312) 152
0.0000 (1,866,842)(1,275,312)(295,827,788) (2,894) (1,280,834) 152
0.0000 (1,866,842)(1,280,834)(297,108,622) (2,944) (1,286,379) 152
0.0000 (1,866,842)(1,286,379)(298,395,001) (2,993) (1,291,949) 152
0.0000 (1,866,842)(1,291,949)(299,686,950) (3,044) (1,297,543) 152
0.0000 (1,866,842)(1,297,543)(300,984,493) (3,094) (1,303,161) 152
0.0000 (1,866,842)(1,303,161)(302,287,654) (3,145) (1,308,803) 152
0.0000 (1,866,842)(1,308,803)(303,596,457) (3,197) (1,314,470) 152
0.0000 (1,866,842)(1,314,470)(304,910,926) (3,249) (1,320,161) 152
0.0000 (1,866,842)(1,320,161)(306,231,087) (3,301) (1,325,877) 152
0.0000 (1,866,842)(1,325,877)(307,556,964) (3,353) (1,331,617) 152
0.0000 (1,866,842)(1,331,617)(308,888,581) (3,406) (1,337,383) 152
0.0000 (1,866,842)(1,337,383)(310,225,963) (3,460) (1,343,173) 152
0.0000 (1,866,842)(1,343,173)(311,569,136) (3,514) (1,348,989) 152
0.0000 (1,866,842)(1,348,989)(312,918,125) (3,568) (1,354,829) 152
0.0000 (1,866,842)(1,354,829)(314,272,954) (3,622) (1,360,695) 152
0.0000 (1,866,842)(1,360,695)(315,633,649) (3,677) (1,366,586) 152
0.0000 (1,866,842)(1,366,586)(317,000,236) (3,733) (1,372,503) 152
0.0000 (1,866,842)(1,372,503)(318,372,739) (3,789) (1,378,446) 152
0.0000 (1,866,842)(1,378,446)(319,751,185) (3,845) (1,384,414) 152
0.0000 (1,866,842)(1,384,414)(321,135,599) (3,901) (1,390,408) 152
0.0000 (1,866,842)(1,390,408)(322,526,007) (3,958) (1,396,428) 152
0.0000 (1,866,842)(1,396,428)(323,922,435) (4,016) (1,402,474) 152
0.0000 (1,866,842)(1,402,474)(325,324,909) (4,074) (1,408,546) 152
0.0000 (1,866,842)(1,408,546)(326,733,455) (4,132) (1,414,645) 152
0.0000 (1,866,842)(1,414,645)(328,148,100) (4,191) (1,420,770) 152
0.0000 (1,866,842)(1,420,770)(329,568,870) (4,250) (1,426,921) 152
0.0000 (1,866,842)(1,426,921)(330,995,791) (4,310) (1,433,099) 152
0.0000 (1,866,842)(1,433,099)(332,428,891) (4,370) (1,439,304) 152

0.0000	(1,866,842)	(1,439,304)	(333,868,195)	(4,430)	(1,445,536)	152
0.0000	(1,866,842)	(1,445,536)	(335,313,731)	(4,491)	(1,451,795)	152
0.0000	(1,866,842)	(1,451,795)	(336,765,525)	(4,553)	(1,458,080)	152
0.0000	(1,866,842)	(1,458,080)	(338,223,606)	(4,614)	(1,464,393)	152
0.0000	(1,866,842)	(1,464,393)	(339,687,999)	(4,677)	(1,470,734)	152
0.0000	(1,866,842)	(1,470,734)	(341,158,733)	(4,739)	(1,477,101)	152
0.0000	(1,866,842)	(1,477,101)	(342,635,834)	(4,803)	(1,483,497)	152
0.0000	(1,866,842)	(1,483,497)	(344,119,331)	(4,866)	(1,489,920)	152
0.0000	(1,866,842)	(1,489,920)	(345,609,251)	(4,930)	(1,496,371)	152
0.0000	(1,866,842)	(1,496,371)	(347,105,621)	(4,995)	(1,502,849)	152
0.0000	(1,866,842)	(1,502,849)	(348,608,471)	(5,060)	(1,509,356)	152
0.0000	(1,866,842)	(1,509,356)	(350,117,827)	(5,126)	(1,515,891)	152
0.0000	(1,866,842)	(1,515,891)	(351,633,718)	(5,192)	(1,522,455)	152
0.0000	(1,866,842)	(1,522,455)	(353,156,173)	(5,258)	(1,529,046)	152
0.0000	(1,866,842)	(1,529,046)	(354,685,219)	(5,325)	(1,535,667)	152
0.0000	(1,866,842)	(1,535,667)	(356,220,886)	(5,392)	(1,542,315)	152
0.0000	(1,866,842)	(1,542,315)	(357,763,201)	(5,460)	(1,548,993)	152
0.0000	(1,866,842)	(1,548,993)	(359,312,194)	(5,529)	(1,555,700)	152
0.0000	(1,866,842)	(1,555,700)	(360,867,894)	(5,598)	(1,562,435)	152
0.0000	(1,866,842)	(2,226,225)	(19,595,164)	1,870	(84,840)	107
0.0000	(2,086,815)	(84,840)	(19,680,005)	1,876	(85,208)	152
0.0000	(2,086,815)	(85,208)	(19,765,212)	1,881	(85,577)	152
0.0000	(2,086,815)	(85,577)	(19,850,789)	1,887	(85,947)	152
0.0000	(2,086,815)	(85,947)	(19,936,736)	1,893	(86,319)	152
0.0000	(2,086,815)	(86,319)	(20,023,056)	1,898	(86,693)	152
0.0000	(2,086,815)	(86,693)	(20,109,749)	1,904	(87,068)	152
0.0000	(2,086,815)	(87,068)	(20,196,817)	1,910	(87,445)	152
0.0000	(2,086,815)	(87,445)	(20,284,262)	1,916	(87,824)	152
0.0000	(2,086,815)	(87,824)	(20,372,086)	1,921	(88,204)	152
0.0000	(2,086,815)	(88,204)	(20,460,291)	1,927	(88,586)	152
0.0000	(2,086,815)	(88,586)	(20,548,877)	1,933	(88,970)	152
0.0000	(2,086,815)	(88,970)	(20,637,846)	1,939	(89,355)	152
0.0000	(2,086,815)	(89,355)	(20,727,201)	1,944	(89,742)	152
0.0000	(2,086,815)	(89,742)	(20,816,943)	1,950	(90,130)	152
0.0000	(2,086,815)	(90,130)	(20,907,073)	1,956	(90,521)	152
0.0000	(2,086,815)	(90,521)	(20,997,594)	1,962	(90,912)	152
0.0000	(2,086,815)	(90,912)	(21,088,506)	1,968	(91,306)	152
0.0000	(2,086,815)	(91,306)	(21,179,812)	1,974	(91,701)	152
0.0000	(2,086,815)	(91,701)	(21,271,514)	1,980	(92,098)	152
0.0000	(2,086,815)	(92,098)	(21,363,612)	1,986	(92,497)	152
0.0000	(2,086,815)	(92,497)	(21,456,109)	1,991	(92,898)	152
0.0000	(2,086,815)	(92,898)	(21,549,007)	1,997	(93,300)	152
0.0000	(2,086,815)	(93,300)	(21,642,307)	2,003	(93,704)	152
0.0000	(2,086,815)	(93,704)	(21,736,011)	2,009	(94,110)	152
0.0000	(2,086,815)	(94,110)	(21,830,120)	2,015	(94,517)	152
0.0000	(2,086,815)	(94,517)	(21,924,637)	2,021	(94,926)	152
0.0000	(2,086,815)	(94,926)	(22,019,563)	2,027	(95,337)	152
0.0000	(2,086,815)	(95,337)	(22,114,901)	2,033	(95,750)	152
0.0000	(2,086,815)	(95,750)	(22,210,651)	2,039	(96,165)	152
0.0000	(2,086,815)	(96,165)	(22,306,815)	2,045	(96,581)	152
0.0000	(2,086,815)	(96,581)	(22,403,396)	2,052	(96,999)	152
0.0000	(2,086,815)	(96,999)	(22,500,395)	2,058	(97,419)	152
0.0000	(2,086,815)	(97,419)	(22,597,814)	2,064	(97,841)	152
0.0000	(2,086,815)	(97,841)	(22,695,655)	2,070	(98,264)	152
0.0000	(2,086,815)	(98,264)	(22,793,920)	2,076	(98,690)	152
0.0000	(2,086,815)	(98,690)	(22,892,610)	2,082	(99,117)	152

0.0000	(2,086,815)	(99,117)	(22,991,727)	2,088	(99,546)	152
0.0000	(2,086,815)	(99,546)	(23,091,273)	2,094	(99,977)	152
0.0000	(2,086,815)	(99,977)	(23,191,251)	2,101	(100,410)	152
0.0000	(2,086,815)	(100,410)	(23,291,661)	2,107	(100,845)	152
0.0000	(2,086,815)	(100,845)	(23,392,506)	2,113	(101,282)	152
0.0000	(2,086,815)	(101,282)	(23,493,787)	2,119	(101,720)	152
0.0000	(2,086,815)	(101,720)	(23,595,507)	2,125	(102,161)	152
0.0000	(2,086,815)	(102,161)	(23,697,668)	2,132	(102,603)	152
0.0000	(2,086,815)	(102,603)	(23,800,271)	2,138	(103,047)	152
0.0000	(2,086,815)	(103,047)	(23,903,318)	2,144	(103,493)	152
0.0000	(2,086,815)	(103,493)	(24,006,811)	2,150	(103,941)	152
0.0000	(2,086,815)	(103,941)	(24,110,753)	2,157	(104,391)	152
0.0000	(2,086,815)	(104,391)	(24,215,144)	2,163	(104,843)	152
0.0000	(2,086,815)	(104,843)	(24,319,987)	2,169	(105,297)	152
0.0000	(2,086,815)	(105,297)	(24,425,285)	2,176	(105,753)	152
0.0000	(2,086,815)	(105,753)	(24,531,038)	2,182	(106,211)	152
0.0000	(2,086,815)	(106,211)	(24,637,249)	2,189	(106,671)	152
0.0000	(2,086,815)	(106,671)	(24,743,920)	2,195	(107,133)	152
0.0000	(2,086,815)	(107,133)	(24,851,052)	2,201	(107,597)	152
0.0000	(2,086,815)	(107,597)	(24,958,649)	2,208	(108,062)	152
0.0000	(2,086,815)	(108,062)	(25,066,712)	2,214	(108,530)	152
0.0000	(2,086,815)	(108,530)	(25,175,242)	2,221	(109,000)	152
0.0000	(2,086,815)	(109,000)	(25,284,242)	2,227	(109,472)	152
0.0000	(2,086,815)	(109,472)	(25,393,714)	2,234	(109,946)	152
0.0000	(2,086,815)	(109,946)	(25,503,660)	2,240	(110,422)	152
0.0000	(2,086,815)	(110,422)	(25,614,083)	2,247	(110,900)	152
0.0000	(2,086,815)	(110,900)	(25,724,983)	2,253	(111,380)	152
0.0000	(2,086,815)	(111,380)	(25,836,363)	2,260	(111,863)	152
0.0000	(2,086,815)	(111,863)	(25,948,226)	2,266	(112,347)	152
0.0000	(2,086,815)	(112,347)	(26,060,573)	2,273	(112,833)	152
0.0000	(2,086,815)	(112,833)	(26,173,407)	2,279	(113,322)	152
0.0000	(2,086,815)	(113,322)	(26,286,728)	2,286	(113,813)	152
0.0000	(2,086,815)	(113,813)	(26,400,541)	2,293	(114,305)	152
0.0000	(2,086,815)	(114,305)	(26,514,846)	2,299	(114,800)	152
0.0000	(2,086,815)	(114,800)	(26,629,647)	2,306	(115,297)	152
0.0000	(2,086,815)	(115,297)	(26,744,944)	2,312	(115,797)	152
0.0000	(2,086,815)	(115,797)	(26,860,741)	2,319	(116,298)	152
0.0000	(2,086,815)	(116,298)	(26,977,038)	2,326	(116,801)	152
0.0000	(2,086,815)	(116,801)	(27,093,840)	2,333	(117,307)	152
0.0000	(2,086,815)	(117,307)	(27,211,147)	2,339	(117,815)	152
0.0000	(2,086,815)	(117,815)	(27,328,962)	2,346	(118,325)	152
0.0000	(2,086,815)	(118,325)	(27,447,287)	2,353	(118,837)	152
0.0000	(2,086,815)	(118,837)	(27,566,125)	2,359	(119,352)	152
0.0000	(2,086,815)	(119,352)	(27,685,477)	2,366	(119,869)	152
0.0000	(2,086,815)	(119,869)	(27,805,345)	2,373	(120,388)	152
0.0000	(2,086,815)	(120,388)	(27,925,733)	2,380	(120,909)	152
0.0000	(2,086,815)	(120,909)	(28,046,642)	2,387	(121,432)	152
0.0000	(2,086,815)	(121,432)	(28,168,074)	2,393	(121,958)	152
0.0000	(2,086,815)	(121,958)	(28,290,033)	2,400	(122,486)	152
0.0000	(2,086,815)	(122,486)	(28,412,519)	2,407	(123,017)	152
0.0000	(2,086,815)	(123,017)	(28,535,535)	2,414	(123,549)	152
0.0000	(2,086,815)	(123,549)	(28,659,084)	2,421	(124,084)	152
0.0000	(2,086,815)	(124,084)	(28,783,169)	2,428	(124,621)	152
0.0000	(2,086,815)	(124,621)	(28,907,790)	2,435	(125,161)	152
0.0000	(2,086,815)	(125,161)	(29,032,951)	2,442	(125,703)	152
0.0000	(2,086,815)	(125,703)	(29,158,654)	2,449	(126,247)	152

0.0000	(2,086,815)	(126,247)	(29,284,901)	2,456	(126,794)	152
0.0000	(2,086,815)	(126,794)	(29,411,694)	2,462	(127,343)	152
0.0000	(2,086,815)	(127,343)	(29,539,037)	2,469	(127,894)	152
0.0000	(2,086,815)	(127,894)	(29,666,931)	2,476	(128,448)	152
0.0000	(2,086,815)	(128,448)	(29,795,379)	2,483	(129,004)	152
0.0000	(2,086,815)	(129,004)	(29,924,383)	2,491	(129,562)	152
0.0000	(2,086,815)	(129,562)	(30,053,945)	2,498	(130,123)	152
0.0000	(2,086,815)	(130,123)	(30,184,068)	2,505	(130,687)	152
0.0000	(2,086,815)	(130,687)	(30,314,755)	2,512	(131,253)	152
0.0000	(2,086,815)	(131,253)	(30,446,008)	2,519	(131,821)	152
0.0000	(2,086,815)	(131,821)	(30,577,829)	2,526	(132,392)	152
0.0000	(2,086,815)	(132,392)	(30,710,220)	2,533	(132,965)	152
0.0000	(2,086,815)	(132,965)	(30,843,185)	2,540	(133,541)	152
0.0000	(2,086,815)	(133,541)	(30,976,726)	2,547	(134,119)	152
0.0000	(2,086,815)	(134,119)	(31,110,844)	2,554	(134,699)	152
0.0000	(2,086,815)	(134,699)	(31,245,544)	2,562	(135,283)	152
0.0000	(2,086,815)	(135,283)	(31,380,826)	2,569	(135,868)	152
0.0000	(2,086,815)	(135,868)	(31,516,695)	2,576	(136,457)	152
0.0000	(2,086,815)	(136,457)	(31,653,151)	2,583	(137,047)	152
0.0000	(2,086,815)	(137,047)	(31,790,199)	2,590	(137,641)	152
0.0000	(2,086,815)	(137,641)	(31,927,839)	2,598	(138,237)	152
0.0000	(2,086,815)	(138,237)	(32,066,076)	2,605	(138,835)	152
0.0000	(2,086,815)	(138,835)	(32,204,911)	2,612	(139,436)	152
0.0000	(2,086,815)	(139,436)	(32,344,348)	2,619	(140,040)	152
0.0000	(2,086,815)	(140,040)	(32,484,388)	2,627	(140,646)	152
0.0000	(2,086,815)	(140,646)	(32,625,034)	2,634	(141,255)	152
0.0000	(2,086,815)	(141,255)	(32,766,289)	2,641	(141,867)	152
0.0000	(2,086,815)	(141,867)	(32,908,156)	2,649	(142,481)	152
0.0000	(2,086,815)	(142,481)	(33,050,637)	2,656	(143,098)	152
0.0000	(2,086,815)	(143,098)	(33,193,735)	2,663	(143,718)	152
0.0000	(2,086,815)	(143,718)	(33,337,453)	2,671	(144,340)	152
0.0000	(2,086,815)	(144,340)	(33,481,793)	2,678	(144,965)	152
0.0000	(2,086,815)	(144,965)	(33,626,758)	2,686	(145,592)	152
0.0000	(2,086,815)	(145,592)	(33,772,350)	2,693	(146,223)	152
0.0000	(2,086,815)	(146,223)	(33,918,573)	2,700	(146,856)	152
0.0000	(2,086,815)	(146,856)	(34,065,429)	2,708	(147,492)	152
0.0000	(2,086,815)	(147,492)	(34,212,920)	2,715	(148,130)	152
0.0000	(2,086,815)	(148,130)	(34,361,051)	2,723	(148,772)	152
0.0000	(2,086,815)	(148,772)	(34,509,822)	2,730	(149,416)	152
0.0000	(2,086,815)	(149,416)	(34,659,238)	2,738	(150,063)	152
0.0000	(2,086,815)	(150,063)	(34,809,301)	2,745	(150,712)	152
0.0000	(2,086,815)	(150,712)	(34,960,013)	2,753	(151,365)	152
0.0000	(2,086,815)	(151,365)	(35,111,378)	2,760	(152,020)	152
0.0000	(2,086,815)	(152,020)	(35,263,399)	2,768	(152,679)	152
0.0000	(2,086,815)	(152,679)	(35,416,077)	2,776	(153,340)	152
0.0000	(2,086,815)	(153,340)	(35,569,417)	2,783	(154,003)	152
0.0000	(2,086,815)	(154,003)	(35,723,420)	2,791	(154,670)	152
0.0000	(2,086,815)	(154,670)	(35,878,091)	2,798	(155,340)	152
0.0000	(2,086,815)	(155,340)	(36,033,431)	2,806	(156,013)	152
0.0000	(2,086,815)	(156,013)	(36,189,443)	2,814	(156,688)	152
0.0000	(2,086,815)	(156,688)	(36,346,131)	2,821	(157,366)	152
0.0000	(2,086,815)	(157,366)	(36,503,498)	2,829	(158,048)	152
0.0000	(2,086,815)	(158,048)	(36,661,545)	2,837	(158,732)	152
0.0000	(2,086,815)	(158,732)	(36,820,277)	2,844	(159,419)	152
0.0000	(2,086,815)	(159,419)	(36,979,697)	2,852	(160,110)	152
0.0000	(2,086,815)	(160,110)	(37,139,806)	2,860	(160,803)	152

0.0000	(2,086,815)	(160,803)	(37,300,609)	2,867	(161,499)	152
0.0000	(2,086,815)	(161,499)	(37,462,108)	2,875	(162,198)	152
0.0000	(2,086,815)	(162,198)	(37,624,306)	2,883	(162,900)	152
0.0000	(2,086,815)	(162,900)	(37,787,206)	2,891	(163,606)	152
0.0000	(2,086,815)	(163,606)	(37,950,812)	2,899	(164,314)	152
0.0000	(2,086,815)	(164,314)	(38,115,126)	2,906	(165,026)	152
0.0000	(2,086,815)	(165,026)	(38,280,152)	2,914	(165,740)	152
0.0000	(2,086,815)	(165,740)	(38,445,892)	2,922	(166,458)	152
0.0000	(2,086,815)	(166,458)	(38,612,350)	2,930	(167,178)	152
0.0000	(2,086,815)	(167,178)	(38,779,528)	2,938	(167,902)	152
0.0000	(2,086,815)	(167,902)	(38,947,430)	2,946	(168,629)	152
0.0000	(2,086,815)	(168,629)	(39,116,059)	2,953	(169,359)	152
0.0000	(2,086,815)	(169,359)	(39,285,419)	2,961	(170,093)	152
0.0000	(2,086,815)	(170,093)	(39,455,511)	2,969	(170,829)	152
0.0000	(2,086,815)	(170,829)	(39,626,340)	2,977	(171,569)	152
0.0000	(2,086,815)	(171,569)	(39,797,909)	2,985	(172,311)	152
0.0000	(2,086,815)	(172,311)	(39,970,220)	2,993	(173,057)	152
0.0000	(2,086,815)	(173,057)	(40,143,278)	3,001	(173,807)	152
0.0000	(2,086,815)	(173,807)	(40,317,084)	3,009	(174,559)	152
0.0000	(2,086,815)	(174,559)	(40,491,644)	3,017	(175,315)	152
0.0000	(2,086,815)	(175,315)	(40,666,959)	3,025	(176,074)	152
0.0000	(2,086,815)	(176,074)	(40,843,033)	3,033	(176,836)	152
0.0000	(2,086,815)	(176,836)	(41,019,869)	3,041	(177,602)	152
0.0000	(2,086,815)	(177,602)	(41,197,471)	3,049	(178,371)	152
0.0000	(2,086,815)	(178,371)	(41,375,842)	3,057	(179,143)	152
0.0000	(2,086,815)	(179,143)	(41,554,986)	3,065	(179,919)	152
0.0000	(2,086,815)	(179,919)	(41,734,905)	3,073	(180,698)	152
0.0000	(2,086,815)	(180,698)	(41,915,603)	3,081	(181,480)	152
0.0000	(2,086,815)	(181,480)	(42,097,083)	3,089	(182,266)	152
0.0000	(2,086,815)	(182,266)	(42,279,349)	3,098	(183,055)	152
0.0000	(2,086,815)	(183,055)	(42,462,404)	3,106	(183,848)	152
0.0000	(2,086,815)	(183,848)	(42,646,252)	3,114	(184,644)	152
0.0000	(2,086,815)	(959,287)	334,107,930	(5,712)	1,446,574	29
0.0000	2,338,579	1,446,574	335,554,503	(5,695)	1,452,837	152
0.0000	2,338,579	1,452,837	337,007,340	(5,678)	1,459,127	152
0.0000	2,338,579	1,459,127	338,466,468	(5,660)	1,465,445	152
0.0000	2,338,579	1,465,445	339,931,913	(5,642)	1,471,790	152
0.0000	2,338,579	1,471,790	341,403,702	(5,624)	1,478,162	152
0.0000	2,338,579	1,478,162	342,881,864	(5,606)	1,484,562	152
0.0000	2,338,579	1,484,562	344,366,426	(5,587)	1,490,990	152
0.0000	2,338,579	1,490,990	345,857,416	(5,569)	1,497,445	152
0.0000	2,338,579	1,497,445	347,354,861	(5,549)	1,503,929	152
0.0000	2,338,579	1,503,929	348,858,790	(5,530)	1,510,440	152
0.0000	2,338,579	1,510,440	350,369,230	(5,510)	1,516,980	152
0.0000	2,338,579	1,516,980	351,886,210	(5,490)	1,523,548	152
0.0000	2,338,579	1,523,548	353,409,757	(5,470)	1,530,144	152
0.0000	2,338,579	1,530,144	354,939,902	(5,450)	1,536,769	152
0.0000	2,338,579	1,536,769	356,476,671	(5,429)	1,543,423	152
0.0000	2,338,579	1,543,423	358,020,094	(5,408)	1,550,105	152
0.0000	2,338,579	1,550,105	359,570,199	(5,386)	1,556,817	152
0.0000	2,338,579	1,556,817	361,127,016	(5,365)	1,563,557	152
0.0000	2,338,579	1,563,557	362,690,573	(5,343)	1,570,327	152
0.0000	2,338,579	1,570,327	364,260,900	(5,320)	1,577,126	152
0.0000	2,338,579	1,577,126	365,838,026	(5,298)	1,583,954	152
0.0000	2,338,579	1,583,954	367,421,980	(5,275)	1,590,812	152
0.0000	2,338,579	1,590,812	369,012,793	(5,252)	1,597,700	152

0.0000	2,338,579	1,597,700	370,610,493	(5,229)	1,604,618	152
0.0000	2,338,579	1,604,618	372,215,110	(5,205)	1,611,565	152
0.0000	2,338,579	1,611,565	373,826,675	(5,181)	1,618,543	152
0.0000	2,338,579	1,618,543	375,445,218	(5,157)	1,625,550	152
0.0000	2,338,579	1,625,550	377,070,768	(5,132)	1,632,588	152
0.0000	2,338,579	1,632,588	378,703,357	(5,107)	1,639,657	152
0.0000	2,338,579	1,639,657	380,343,013	(5,082)	1,646,756	152
0.0000	2,338,579	1,646,756	381,989,769	(5,056)	1,653,886	152
0.0000	2,338,579	1,653,886	383,643,655	(5,030)	1,661,047	152
0.0000	2,338,579	1,661,047	385,304,702	(5,004)	1,668,238	152
0.0000	2,338,579	1,668,238	386,972,941	(4,978)	1,675,461	152
0.0000	2,338,579	1,675,461	388,648,402	(4,951)	1,682,716	152
0.0000	2,338,579	1,682,716	390,331,118	(4,924)	1,690,001	152
0.0000	2,338,579	1,690,001	392,021,119	(4,896)	1,697,318	152
0.0000	2,338,579	1,697,318	393,718,437	(4,868)	1,704,667	152
0.0000	2,338,579	1,704,667	395,423,104	(4,840)	1,712,048	152
0.0000	2,338,579	1,712,048	397,135,152	(4,811)	1,719,460	152
0.0000	2,338,579	1,719,460	398,854,612	(4,783)	1,726,905	152
0.0000	2,338,579	1,726,905	400,581,517	(4,753)	1,734,382	152
0.0000	2,338,579	1,734,382	402,315,899	(4,724)	1,741,891	152
0.0000	2,338,579	1,741,891	404,057,790	(4,694)	1,749,433	152
0.0000	2,338,579	1,749,433	405,807,223	(4,664)	1,757,007	152
0.0000	2,338,579	1,757,007	407,564,231	(4,633)	1,764,615	152
0.0000	2,338,579	1,764,615	409,328,845	(4,602)	1,772,255	152
0.0000	2,338,579	1,772,255	411,101,100	(4,571)	1,779,928	152
0.0000	2,338,579	1,779,928	412,881,028	(4,540)	1,787,635	152
0.0000	2,338,579	1,787,635	414,668,663	(4,508)	1,795,374	152
0.0000	2,338,579	1,795,374	416,464,037	(4,475)	1,803,148	152
0.0000	2,338,579	1,803,148	418,267,185	(4,442)	1,810,955	152
0.0000	2,338,579	1,810,955	420,078,140	(4,409)	1,818,796	152
0.0000	2,338,579	1,818,796	421,896,936	(4,376)	1,826,670	152
0.0000	2,338,579	1,826,670	423,723,606	(4,342)	1,834,579	152
0.0000	2,338,579	1,834,579	425,558,185	(4,308)	1,842,522	152
0.0000	2,338,579	1,842,522	427,400,708	(4,273)	1,850,500	152
0.0000	2,338,579	1,850,500	429,251,208	(4,238)	1,858,512	152
0.0000	2,338,579	1,858,512	431,109,719	(4,203)	1,866,559	152
0.0000	2,338,579	1,866,559	432,976,278	(4,167)	1,874,640	152
0.0000	2,338,579	1,874,640	434,850,918	(4,131)	1,882,757	152
0.0000	2,338,579	1,882,757	436,733,675	(4,095)	1,890,908	152
0.0000	2,338,579	1,890,908	438,624,584	(4,058)	1,899,095	152
0.0000	2,338,579	1,899,095	440,523,679	(4,021)	1,907,318	152
0.0000	2,338,579	1,907,318	442,430,997	(3,983)	1,915,576	152
0.0000	2,338,579	1,915,576	444,346,573	(3,945)	1,923,870	152
0.0000	2,338,579	1,923,870	446,270,443	(3,906)	1,932,199	152
0.0000	2,338,579	1,932,199	448,202,642	(3,867)	1,940,565	152
0.0000	2,338,579	1,940,565	450,143,207	(3,828)	1,948,967	152
0.0000	2,338,579	1,948,967	452,092,174	(3,788)	1,957,406	152
0.0000	2,338,579	1,957,406	454,049,580	(3,748)	1,965,880	152
0.0000	2,338,579	1,965,880	456,015,460	(3,708)	1,974,392	152
0.0000	2,338,579	1,974,392	457,989,852	(3,667)	1,982,940	152
0.0000	2,338,579	1,982,940	459,972,793	(3,625)	1,991,526	152
0.0000	2,338,579	1,991,526	461,964,319	(3,583)	2,000,149	152
0.0000	2,338,579	2,000,149	463,964,467	(3,541)	2,008,809	152
0.0000	2,338,579	2,008,809	465,973,276	(3,498)	2,017,506	152
0.0000	2,338,579	2,017,506	467,990,782	(3,455)	2,026,241	152
0.0000	2,338,579	2,026,241	470,017,023	(3,412)	2,035,014	152

0.0000	2,338,579	2,035,014	472,052,037	(3,368)	2,043,825	152
0.0000	2,338,579	2,043,825	474,095,862	(3,323)	2,052,674	152
0.0000	2,338,579	2,052,674	476,148,536	(3,278)	2,061,561	152
0.0000	2,338,579	2,061,561	478,210,098	(3,233)	2,070,487	152
0.0000	2,338,579	2,070,487	480,280,585	(3,187)	2,079,452	152
0.0000	2,338,579	2,079,452	482,360,037	(3,141)	2,088,455	152
0.0000	2,338,579	2,088,455	484,448,492	(3,094)	2,097,497	152
0.0000	2,338,579	2,097,497	486,545,989	(3,047)	2,106,579	152
0.0000	2,338,579	2,106,579	488,652,568	(2,999)	2,115,700	152
0.0000	2,338,579	2,115,700	490,768,268	(2,951)	2,124,860	152
0.0000	2,338,579	2,124,860	492,893,128	(2,903)	2,134,060	152
0.0000	2,338,579	2,134,060	495,027,187	(2,853)	2,143,300	152
0.0000	2,338,579	2,143,300	497,170,487	(2,804)	2,152,579	152
0.0000	2,338,579	2,152,579	499,323,066	(2,754)	2,161,899	152
0.0000	2,338,579	2,161,899	501,484,966	(2,703)	2,171,260	152
0.0000	2,338,579	2,171,260	503,656,225	(2,652)	2,180,660	152
0.0000	2,338,579	2,180,660	505,836,885	(2,601)	2,190,102	152
0.0000	2,338,579	2,190,102	508,026,987	(2,549)	2,199,584	152
0.0000	2,338,579	2,199,584	510,226,572	(2,496)	2,209,108	152
0.0000	2,338,579	2,209,108	512,435,679	(2,443)	2,218,672	152
0.0000	2,338,579	2,218,672	514,654,352	(2,390)	2,228,279	152
0.0000	2,338,579	2,228,279	516,882,630	(2,336)	2,237,926	152
0.0000	2,338,579	2,237,926	519,120,557	(2,281)	2,247,616	152
0.0000	2,338,579	2,247,616	521,368,172	(2,226)	2,257,347	152
0.0000	2,338,579	2,257,347	523,625,519	(2,171)	2,267,121	152
0.0000	2,338,579	2,267,121	525,892,640	(2,114)	2,276,936	152
0.0000	2,338,579	2,276,936	528,169,576	(2,058)	2,286,795	152
0.0000	2,338,579	2,286,795	530,456,371	(2,001)	2,296,696	152
0.0000	2,338,579	2,296,696	532,753,067	(1,943)	2,306,640	152
0.0000	2,338,579	2,306,640	535,059,707	(1,885)	2,316,627	152
0.0000	2,338,579	2,316,627	537,376,334	(1,826)	2,326,657	152
0.0000	2,338,579	2,326,657	539,702,991	(1,767)	2,336,731	152
0.0000	2,338,579	2,336,731	542,039,721	(1,707)	2,346,848	152
0.0000	2,338,579	2,346,848	544,386,569	(1,646)	2,357,009	152
0.0000	2,338,579	2,357,009	546,743,578	(1,586)	2,367,214	152
0.0000	2,338,579	2,367,214	549,110,792	(1,524)	2,377,463	152
0.0000	2,338,579	2,377,463	551,488,255	(1,462)	2,387,757	152
0.0000	2,338,579	2,387,757	553,876,012	(1,399)	2,398,095	152
0.0000	2,338,579	2,398,095	556,274,107	(1,336)	2,408,478	152
0.0000	2,338,579	2,408,478	558,682,585	(1,272)	2,418,906	152
0.0000	2,338,579	2,418,906	561,101,491	(1,208)	2,429,379	152
0.0000	2,338,579	2,429,379	563,530,870	(1,143)	2,439,897	152
0.0000	2,338,579	2,439,897	565,970,767	(1,077)	2,450,461	152
0.0000	2,338,579	2,450,461	568,421,228	(1,011)	2,461,071	152
0.0000	2,338,579	2,461,071	570,882,299	(945)	2,471,726	152
0.0000	2,338,579	2,471,726	573,354,025	(877)	2,482,428	152
0.0000	2,338,579	2,482,428	575,836,454	(809)	2,493,176	152
0.0000	2,338,579	2,493,176	578,329,630	(741)	2,503,971	152
0.0000	2,338,579	2,503,971	580,833,601	(672)	2,514,812	152
0.0000	2,338,579	2,514,812	583,348,413	(602)	2,525,700	152
0.0000	2,338,579	2,525,700	585,874,113	(532)	2,536,636	152
0.0000	2,338,579	2,536,636	588,410,749	(461)	2,547,619	152
0.0000	2,338,579	2,547,619	590,958,368	(389)	2,558,649	152
0.0000	2,338,579	2,558,649	593,517,017	(317)	2,569,727	152
0.0000	2,338,579	2,569,727	596,086,744	(244)	2,580,853	152
0.0000	2,338,579	2,580,853	598,667,597	(170)	2,592,027	152

0.0000	2,338,579	2,592,027	601,259,624	(96)	2,603,250	152
0.0000	2,338,579	2,603,250	603,862,874	(22)	2,614,521	152
0.0000	2,338,579	2,614,521	606,477,395	54	2,625,841	152
0.0000	2,338,579	2,625,841	609,103,237	130	2,637,210	152
0.0000	2,338,579	2,637,210	611,740,447	207	2,648,628	152
0.0000	2,338,579	2,648,628	614,389,075	284	2,660,096	152
0.0000	2,338,579	2,660,096	617,049,171	362	2,671,613	152
0.0000	2,338,579	2,671,613	619,720,784	441	2,683,180	152
0.0000	2,338,579	2,683,180	622,403,965	520	2,694,798	152
0.0000	2,338,579	2,694,798	625,098,763	601	2,706,465	152
0.0000	2,338,579	2,706,465	627,805,228	681	2,718,183	152
0.0000	2,338,579	2,718,183	630,523,411	763	2,729,952	152
0.0000	2,338,579	2,729,952	633,253,363	845	2,741,772	152
0.0000	2,338,579	2,741,772	635,995,135	928	2,753,643	152
0.0000	2,338,579	2,753,643	638,748,778	1,011	2,765,565	152
0.0000	2,338,579	2,765,565	641,514,344	1,096	2,777,539	152
0.0000	2,338,579	2,777,539	644,291,883	1,181	2,789,565	152
0.0000	2,338,579	2,789,565	647,081,448	1,266	2,801,643	152
0.0000	2,338,579	2,801,643	649,883,091	1,353	2,813,773	152
0.0000	2,338,579	2,813,773	652,696,864	1,440	2,825,956	152
0.0000	2,338,579	2,825,956	655,522,819	1,528	2,838,191	152
0.0000	2,338,579	2,838,191	658,361,010	1,616	2,850,480	152
0.0000	2,338,579	2,850,480	661,211,490	1,706	2,862,821	152
0.0000	2,338,579	2,862,821	664,074,311	1,796	2,875,216	152
0.0000	2,338,579	2,875,216	666,949,527	1,887	2,887,665	152
0.0000	2,338,579	2,887,665	669,837,192	1,978	2,900,168	152
0.0000	2,338,579	2,900,168	672,737,360	2,071	2,912,724	152
0.0000	2,338,579	2,912,724	675,650,084	2,164	2,925,335	152
0.0000	2,338,579	2,925,335	678,575,419	2,257	2,938,001	152
0.0000	2,338,579	2,938,001	681,513,420	2,352	2,950,722	152
0.0000	2,338,579	2,950,722	684,464,142	2,448	2,963,497	152
0.0000	2,338,579	2,963,497	687,427,639	2,544	2,976,328	152
0.0000	2,338,579	2,976,328	690,403,967	2,641	2,989,215	152
0.0000	2,338,579	2,989,215	693,393,182	2,739	3,002,157	152
0.0000	2,338,579	3,002,157	696,395,339	2,837	3,015,155	152
0.0000	2,338,579	3,015,155	699,410,494	2,937	3,028,210	152
0.0000	2,338,579	3,028,210	702,438,704	3,037	3,041,321	152
0.0000	2,338,579	3,041,321	705,480,025	3,138	3,054,489	152
0.0000	2,338,579	3,054,489	708,534,514	3,240	3,067,714	152
0.0000	2,338,579	3,067,714	711,602,228	3,342	3,080,996	152
0.0000	2,338,579	3,080,996	714,683,224	3,446	3,094,336	152
0.0000	2,338,579	3,094,336	717,777,559	3,550	3,107,733	152
0.0000	2,338,579	3,107,733	720,885,292	3,655	3,121,188	152
0.0000	2,338,579	3,121,188	724,006,481	3,761	3,134,702	152
0.0000	2,338,579	3,134,702	727,141,183	3,868	3,148,274	152
0.0000	2,338,579	3,148,274	730,289,457	3,976	3,161,905	152
0.0000	2,338,579	3,161,905	733,451,363	4,084	3,175,595	152
0.0000	2,338,579	3,175,595	736,626,958	4,194	3,189,345	152
0.0000	2,338,579	3,446,182	309,774,612	(4,458)	1,341,219	141
0.0000	2,338,579	1,341,219	311,115,831	(4,438)	1,347,026	152
0.0000	2,338,579	1,347,026	312,462,857	(4,418)	1,352,858	152
0.0000	2,338,579	1,352,858	313,815,715	(4,399)	1,358,715	152
0.0000	2,338,579	1,358,715	315,174,430	(4,378)	1,364,598	152
0.0000	2,338,579	1,364,598	316,539,028	(4,358)	1,370,506	152
0.0000	2,338,579	1,370,506	317,909,535	(4,337)	1,376,440	152
0.0000	2,338,579	1,376,440	319,285,975	(4,316)	1,382,400	152

10.0000	2,338,579	1,382,400	320,668,375	(4,295)	1,388,385	152
10.0000	2,338,579	1,388,385	322,056,760	(4,273)	1,394,396	152
10.0000	2,338,579	1,394,396	323,451,156	(4,252)	1,400,434	152
10.0000	2,338,579	1,400,434	324,851,590	(4,230)	1,406,497	152
10.0000	2,338,579	1,406,497	326,258,087	(4,207)	1,412,587	152
10.0000	2,338,579	1,412,587	327,670,674	(4,185)	1,418,703	152
10.0000	2,338,579	1,418,703	329,089,377	(4,162)	1,424,845	152
10.0000	2,338,579	1,424,845	330,514,222	(4,139)	1,431,014	152
10.0000	2,338,579	1,431,014	331,945,236	(4,115)	1,437,210	152
10.0000	2,338,579	1,437,210	333,382,446	(4,092)	1,443,433	152
10.0000	2,338,579	1,443,433	334,825,879	(4,068)	1,449,682	152
10.0000	2,338,579	1,449,682	336,275,561	(4,043)	1,455,959	152
10.0000	2,338,579	1,455,959	337,731,520	(4,019)	1,462,263	152
10.0000	2,338,579	1,462,263	339,193,783	(3,994)	1,468,594	152
10.0000	2,338,579	1,468,594	340,662,377	(3,969)	1,474,952	152
10.0000	2,338,579	1,474,952	342,137,329	(3,943)	1,481,338	152
10.0000	2,338,579	1,481,338	343,618,668	(3,918)	1,487,752	152
10.0000	2,338,579	1,487,752	345,106,420	(3,892)	1,494,194	152
10.0000	2,338,579	1,494,194	346,600,613	(3,865)	1,500,663	152
10.0000	2,338,579	1,500,663	348,101,276	(3,839)	1,507,160	152
10.0000	2,338,579	1,507,160	349,608,436	(3,812)	1,513,686	152
10.0000	2,338,579	1,513,686	351,122,122	(3,785)	1,520,240	152
10.0000	2,338,579	1,520,240	352,642,362	(3,757)	1,526,822	152
10.0000	2,338,579	1,526,822	354,169,183	(3,729)	1,533,432	152
10.0000	2,338,579	1,533,432	355,702,616	(3,701)	1,540,071	152
10.0000	2,338,579	1,540,071	357,242,687	(3,673)	1,546,739	152
10.0000	2,338,579	1,546,739	358,789,427	(3,644)	1,553,436	152
10.0000	2,338,579	1,553,436	360,342,863	(3,615)	1,560,162	152
10.0000	2,338,579	1,560,162	361,903,025	(3,585)	1,566,917	152
10.0000	2,338,579	1,566,917	363,469,942	(3,556)	1,573,701	152
10.0000	2,338,579	1,573,701	365,043,644	(3,525)	1,580,515	152
10.0000	2,338,579	1,580,515	366,624,159	(3,495)	1,587,358	152
10.0000	2,338,579	1,587,358	368,211,517	(3,464)	1,594,231	152
10.0000	2,338,579	1,594,231	369,805,748	(3,433)	1,601,133	152
10.0000	2,338,579	1,601,133	371,406,881	(3,402)	1,608,066	152
10.0000	2,338,579	1,608,066	373,014,946	(3,370)	1,615,028	152
10.0000	2,338,579	1,615,028	374,629,974	(3,338)	1,622,021	152
10.0000	2,338,579	1,622,021	376,251,995	(3,306)	1,629,043	152
10.0000	2,338,579	1,629,043	377,881,038	(3,273)	1,636,097	152
10.0000	2,338,579	1,636,097	379,517,135	(3,240)	1,643,180	152
10.0000	2,338,579	1,643,180	381,160,315	(3,206)	1,650,295	152
10.0000	2,338,579	1,650,295	382,810,610	(3,173)	1,657,440	152
10.0000	2,338,579	1,657,440	384,468,050	(3,138)	1,664,616	152
10.0000	2,338,579	1,664,616	386,132,666	(3,104)	1,671,823	152
10.0000	2,338,579	1,671,823	387,804,489	(3,069)	1,679,062	152
10.0000	2,338,579	1,679,062	389,483,551	(3,034)	1,686,331	152
10.0000	2,338,579	1,686,331	391,169,882	(2,998)	1,693,633	152
10.0000	2,338,579	1,693,633	392,863,515	(2,962)	1,700,966	152
10.0000	2,338,579	1,700,966	394,564,481	(2,926)	1,708,330	152
10.0000	2,338,579	1,708,330	396,272,811	(2,889)	1,715,727	152
10.0000	2,338,579	1,715,727	397,988,537	(2,852)	1,723,155	152
10.0000	2,338,579	1,723,155	399,711,693	(2,815)	1,730,616	152
10.0000	2,338,579	1,730,616	401,442,308	(2,777)	1,738,109	152
10.0000	2,338,579	1,738,109	403,180,417	(2,739)	1,745,634	152
10.0000	2,338,579	1,745,634	404,926,052	(2,700)	1,753,192	152
10.0000	2,338,579	1,753,192	406,679,244	(2,661)	1,760,783	152

0.0000	2,338,579	1,760,783	408,440,027	(2,622)	1,768,407	152
0.0000	2,338,579	1,768,407	410,208,433	(2,582)	1,776,063	152
0.0000	2,338,579	1,776,063	411,984,496	(2,542)	1,783,753	152
0.0000	2,338,579	1,783,753	413,768,249	(2,502)	1,791,476	152
0.0000	2,338,579	1,791,476	415,559,725	(2,461)	1,799,232	152
0.0000	2,338,579	1,799,232	417,358,958	(2,419)	1,807,023	152
0.0000	2,338,579	1,807,023	419,165,980	(2,378)	1,814,846	152
0.0000	2,338,579	1,814,846	420,980,827	(2,336)	1,822,704	152
0.0000	2,338,579	1,822,704	422,803,531	(2,293)	1,830,596	152
0.0000	2,338,579	1,830,596	424,634,126	(2,250)	1,838,522	152
0.0000	2,338,579	1,838,522	426,472,648	(2,207)	1,846,482	152
0.0000	2,338,579	1,846,482	428,319,130	(2,163)	1,854,476	152
0.0000	2,338,579	1,854,476	430,173,606	(2,119)	1,862,506	152
0.0000	2,338,579	1,862,506	432,036,111	(2,074)	1,870,570	152
0.0000	2,338,579	1,870,570	433,906,681	(2,029)	1,878,669	152
0.0000	2,338,579	1,878,669	435,785,350	(1,984)	1,886,803	152
0.0000	2,338,579	1,886,803	437,672,152	(1,938)	1,894,972	152
0.0000	2,338,579	1,894,972	439,567,124	(1,891)	1,903,176	152
0.0000	2,338,579	1,903,176	441,470,300	(1,844)	1,911,416	152
0.0000	2,338,579	1,911,416	443,381,717	(1,797)	1,919,692	152
0.0000	2,338,579	1,919,692	445,301,409	(1,750)	1,928,004	152
0.0000	2,338,579	1,928,004	447,229,413	(1,701)	1,936,351	152
0.0000	2,338,579	1,936,351	449,165,764	(1,653)	1,944,735	152
0.0000	2,338,579	1,944,735	451,110,499	(1,604)	1,953,155	152
0.0000	2,338,579	1,953,155	453,063,655	(1,554)	1,961,612	152
0.0000	2,338,579	1,961,612	455,025,266	(1,504)	1,970,105	152
0.0000	2,338,579	1,970,105	456,995,371	(1,454)	1,978,635	152
0.0000	2,338,579	1,978,635	458,974,006	(1,403)	1,987,202	152
0.0000	2,338,579	1,987,202	460,961,207	(1,352)	1,995,805	152
0.0000	2,338,579	1,995,805	462,957,013	(1,300)	2,004,447	152
0.0000	2,338,579	2,004,447	464,961,459	(1,248)	2,013,125	152
0.0000	2,338,579	2,013,125	466,974,585	(1,195)	2,021,841	152
0.0000	2,338,579	2,021,841	468,996,426	(1,142)	2,030,595	152
0.0000	2,338,579	2,030,595	471,027,021	(1,088)	2,039,387	152
0.0000	2,338,579	2,039,387	473,066,408	(1,034)	2,048,217	152
0.0000	2,338,579	2,048,217	475,114,625	(979)	2,057,085	152
0.0000	2,338,579	2,057,085	477,171,710	(924)	2,065,991	152
0.0000	2,338,579	2,065,991	479,237,701	(868)	2,074,936	152
0.0000	2,338,579	2,074,936	481,312,638	(812)	2,083,920	152
0.0000	2,338,579	2,083,920	483,396,558	(755)	2,092,943	152
0.0000	2,338,579	2,092,943	485,489,501	(698)	2,102,005	152
0.0000	2,338,579	2,102,005	487,591,506	(641)	2,111,106	152
0.0000	2,338,579	2,111,106	489,702,611	(582)	2,120,246	152
0.0000	2,338,579	2,120,246	491,822,857	(524)	2,129,426	152
0.0000	2,338,579	2,129,426	493,952,283	(464)	2,138,646	152
0.0000	2,338,579	2,138,646	496,090,929	(405)	2,147,905	152
0.0000	2,338,579	2,147,905	498,238,834	(344)	2,157,205	152
0.0000	2,338,579	2,157,205	500,396,039	(283)	2,166,545	152
0.0000	2,338,579	2,166,545	502,562,584	(222)	2,175,925	152
0.0000	2,338,579	2,175,925	504,738,509	(160)	2,185,346	152
0.0000	2,338,579	2,185,346	506,923,855	(98)	2,194,808	152
0.0000	2,338,579	2,194,808	509,118,663	(35)	2,204,311	152
0.0000	2,338,579	2,204,311	511,322,974	29	2,213,855	152
0.0000	2,338,579	2,213,855	513,536,829	93	2,223,440	152
0.0000	2,338,579	2,223,440	515,760,269	157	2,233,067	152
0.0000	2,338,579	2,233,067	517,993,336	223	2,242,735	152

0.0000	2,338,579	2,242,735	520,236,071	288	2,252,445	152
0.0000	2,338,579	2,252,445	522,488,516	355	2,262,198	152
0.0000	2,338,579	2,262,198	524,750,714	422	2,271,992	152
0.0000	2,338,579	2,271,992	527,022,707	489	2,281,829	152
0.0000	2,338,579	2,281,829	529,304,536	557	2,291,709	152
0.0000	2,338,579	2,291,709	531,596,245	626	2,301,631	152
0.0000	2,338,579	2,301,631	533,897,876	695	2,311,596	152
0.0000	2,338,579	2,311,596	536,209,472	765	2,321,605	152
0.0000	2,338,579	2,321,605	538,531,077	835	2,331,657	152
0.0000	2,338,579	2,331,657	540,862,734	906	2,341,752	152
0.0000	2,338,579	2,341,752	543,204,486	978	2,351,891	152
0.0000	2,338,579	2,351,891	545,556,377	1,050	2,362,074	152
0.0000	2,338,579	2,362,074	547,918,450	1,123	2,372,301	152
0.0000	2,338,579	2,372,301	550,290,751	1,196	2,382,572	152
0.0000	2,338,579	2,382,572	552,673,323	1,270	2,392,888	152
0.0000	2,338,579	2,392,888	555,066,211	1,345	2,403,248	152
0.0000	2,338,579	2,403,248	557,469,459	1,420	2,413,653	152
0.0000	2,338,579	2,413,653	559,883,113	1,496	2,424,104	152
0.0000	2,338,579	2,424,104	562,307,216	1,572	2,434,599	152
0.0000	2,338,579	2,434,599	564,741,815	1,649	2,445,140	152
0.0000	2,338,579	2,445,140	567,186,956	1,727	2,455,727	152
0.0000	2,338,579	2,455,727	569,642,683	1,805	2,466,359	152
0.0000	2,338,579	2,466,359	572,109,042	1,885	2,477,038	152
0.0000	2,338,579	2,477,038	574,586,080	1,964	2,487,763	152
0.0000	2,338,579	2,487,763	577,073,842	2,045	2,498,534	152
0.0000	2,338,579	2,498,534	579,572,376	2,126	2,509,352	152
0.0000	2,338,579	2,509,352	582,081,727	2,207	2,520,216	152
0.0000	2,338,579	2,520,216	584,601,944	2,290	2,531,128	152
0.0000	2,338,579	2,531,128	587,133,071	2,373	2,542,087	152
0.0000	2,338,579	2,542,087	589,675,158	2,456	2,553,093	152
0.0000	2,338,579	2,553,093	592,228,251	2,541	2,564,147	152
0.0000	2,338,579	2,564,147	594,792,398	2,626	2,575,249	152
0.0000	2,338,579	2,575,249	597,367,648	2,712	2,586,399	152
0.0000	2,338,579	2,586,399	599,954,047	2,798	2,597,597	152
0.0000	2,338,579	2,597,597	602,551,644	2,885	2,608,844	152
0.0000	2,338,579	2,608,844	605,160,488	2,973	2,620,139	152
0.0000	2,338,579	2,620,139	607,780,627	3,062	2,631,484	152
0.0000	2,338,579	2,631,484	610,412,111	3,151	2,642,877	152
0.0000	2,338,579	2,642,877	613,054,988	3,241	2,654,320	152
0.0000	2,338,579	2,654,320	615,709,308	3,332	2,665,812	152
0.0000	2,338,579	2,665,812	618,375,120	3,423	2,677,354	152
0.0000	2,338,579	2,677,354	621,052,474	3,515	2,688,946	152
0.0000	2,338,579	2,688,946	623,741,420	3,608	2,700,588	152
0.0000	2,338,579	2,700,588	626,442,009	3,702	2,712,281	152
0.0000	2,338,579	2,712,281	629,154,290	3,796	2,724,024	152
0.0000	2,338,579	2,724,024	631,878,314	3,891	2,735,818	152
0.0000	2,338,579	2,735,818	634,614,133	3,987	2,747,664	152
0.0000	2,338,579	2,747,664	637,361,796	4,084	2,759,560	152
0.0000	2,338,579	2,759,560	640,121,356	4,181	2,771,508	152
0.0000	2,338,579	2,771,508	642,892,864	4,279	2,783,508	152
0.0000	2,338,579	2,783,508	645,676,372	4,378	2,795,559	152
0.0000	2,338,579	2,795,559	648,471,931	4,478	2,807,663	152
0.0000	2,338,579	2,807,663	651,279,595	4,579	2,819,819	152
0.0000	2,338,579	2,819,819	654,099,414	4,680	2,832,028	152
0.0000	2,338,579	2,832,028	656,931,442	4,782	2,844,290	152
0.0000	2,338,579	2,844,290	659,775,732	4,885	2,856,605	152

0.0000	2,338,579	2,856,605	662,632,337	4,988	2,868,973	152
0.0000	2,338,579	2,868,973	665,501,310	5,093	2,881,395	152
0.0000	2,338,579	2,881,395	668,382,705	5,198	2,893,870	152
0.0000	2,338,579	2,893,870	671,276,575	5,304	2,906,400	152
0.0000	2,338,579	2,906,400	674,182,974	5,411	2,918,983	152
0.0000	2,338,579	2,918,983	677,101,958	5,519	2,931,621	152
0.0000	2,338,579	1,928,977	253,409,565	(5,807)	1,097,177	231
0.0000	3,049,596	1,097,177	254,506,742	(5,800)	1,101,928	152
0.0000	3,049,596	1,101,928	255,608,670	(5,794)	1,106,699	152
0.0000	3,049,596	1,106,699	256,715,369	(5,787)	1,111,490	152
0.0000	3,049,596	1,111,490	257,826,859	(5,780)	1,116,303	152
0.0000	3,049,596	1,116,303	258,943,162	(5,772)	1,121,136	152
0.0000	3,049,596	1,121,136	260,064,297	(5,765)	1,125,990	152
0.0000	3,049,596	1,125,990	261,190,288	(5,757)	1,130,865	152
0.0000	3,049,596	1,130,865	262,321,153	(5,750)	1,135,761	152
0.0000	3,049,596	1,135,761	263,456,914	(5,742)	1,140,679	152
0.0000	3,049,596	1,140,679	264,597,593	(5,734)	1,145,618	152
0.0000	3,049,596	1,145,618	265,743,211	(5,725)	1,150,578	152
0.0000	3,049,596	1,150,578	266,893,789	(5,717)	1,155,559	152
0.0000	3,049,596	1,155,559	268,049,348	(5,708)	1,160,563	152
0.0000	3,049,596	1,160,563	269,209,911	(5,699)	1,165,587	152
0.0000	3,049,596	1,165,587	270,375,498	(5,690)	1,170,634	152
0.0000	3,049,596	1,170,634	271,546,132	(5,681)	1,175,703	152
0.0000	3,049,596	1,175,703	272,721,835	(5,672)	1,180,793	152
0.0000	3,049,596	1,180,793	273,902,628	(5,662)	1,185,905	152
0.0000	3,049,596	1,185,905	275,088,533	(5,653)	1,191,040	152
0.0000	3,049,596	1,191,040	276,279,573	(5,643)	1,196,197	152
0.0000	3,049,596	1,196,197	277,475,770	(5,633)	1,201,376	152
0.0000	3,049,596	1,201,376	278,677,146	(5,622)	1,206,577	152
0.0000	3,049,596	1,206,577	279,883,723	(5,612)	1,211,801	152
0.0000	3,049,596	1,211,801	281,095,524	(5,601)	1,217,048	152
0.0000	3,049,596	1,217,048	282,312,573	(5,590)	1,222,318	152
0.0000	3,049,596	1,222,318	283,534,890	(5,579)	1,227,610	152
0.0000	3,049,596	1,227,610	284,762,500	(5,568)	1,232,925	152
0.0000	3,049,596	1,232,925	285,995,425	(5,556)	1,238,263	152
0.0000	3,049,596	1,238,263	287,233,688	(5,544)	1,243,624	152
0.0000	3,049,596	1,243,624	288,477,312	(5,533)	1,249,009	152
0.0000	3,049,596	1,249,009	289,726,321	(5,520)	1,254,417	152
0.0000	3,049,596	1,254,417	290,980,737	(5,508)	1,259,848	152
0.0000	3,049,596	1,259,848	292,240,585	(5,496)	1,265,302	152
0.0000	3,049,596	1,265,302	293,505,888	(5,483)	1,270,781	152
0.0000	3,049,596	1,270,781	294,776,668	(5,470)	1,276,283	152
0.0000	3,049,596	1,276,283	296,052,951	(5,457)	1,281,809	152
0.0000	3,049,596	1,281,809	297,334,760	(5,443)	1,287,359	152
0.0000	3,049,596	1,287,359	298,622,118	(5,430)	1,292,932	152
0.0000	3,049,596	1,292,932	299,915,051	(5,416)	1,298,530	152
0.0000	3,049,596	1,298,530	301,213,581	(5,402)	1,304,152	152
0.0000	3,049,596	1,304,152	302,517,734	(5,387)	1,309,799	152
0.0000	3,049,596	1,309,799	303,827,533	(5,373)	1,315,470	152
0.0000	3,049,596	1,315,470	305,143,003	(5,358)	1,321,166	152
0.0000	3,049,596	1,321,166	306,464,168	(5,343)	1,326,886	152
0.0000	3,049,596	1,326,886	307,791,054	(5,328)	1,332,631	152
0.0000	3,049,596	1,332,631	309,123,685	(5,313)	1,338,401	152
0.0000	3,049,596	1,338,401	310,462,085	(5,297)	1,344,195	152
0.0000	3,049,596	1,344,195	311,806,281	(5,281)	1,350,015	152
0.0000	3,049,596	1,350,015	313,156,296	(5,265)	1,355,860	152

0.0000	3,049,596	1,355,860	314,512,156	(5,249)	1,361,731	152
0.0000	3,049,596	1,361,731	315,873,887	(5,232)	1,367,627	152
0.0000	3,049,596	1,367,627	317,241,514	(5,215)	1,373,548	152
0.0000	3,049,596	1,373,548	318,615,062	(5,198)	1,379,495	152
0.0000	3,049,596	1,379,495	319,994,557	(5,181)	1,385,468	152
0.0000	3,049,596	1,385,468	321,380,024	(5,163)	1,391,466	152
0.0000	3,049,596	1,391,466	322,771,491	(5,145)	1,397,491	152
0.0000	3,049,596	1,397,491	324,168,982	(5,127)	1,403,542	152
0.0000	3,049,596	1,403,542	325,572,523	(5,109)	1,409,618	152
0.0000	3,049,596	1,409,618	326,982,142	(5,090)	1,415,722	152
0.0000	3,049,596	1,415,722	328,397,863	(5,071)	1,421,851	152
0.0000	3,049,596	1,421,851	329,819,714	(5,052)	1,428,007	152
0.0000	3,049,596	1,428,007	331,247,722	(5,033)	1,434,190	152
0.0000	3,049,596	1,434,190	332,681,912	(5,013)	1,440,400	152
0.0000	3,049,596	1,440,400	334,122,312	(4,993)	1,446,636	152
0.0000	3,049,596	1,446,636	335,568,948	(4,973)	1,452,900	152
0.0000	3,049,596	1,452,900	337,021,847	(4,953)	1,459,190	152
0.0000	3,049,596	1,459,190	338,481,037	(4,932)	1,465,508	152
0.0000	3,049,596	1,465,508	339,946,545	(4,911)	1,471,853	152
0.0000	3,049,596	1,471,853	341,418,398	(4,890)	1,478,226	152
0.0000	3,049,596	1,478,226	342,896,624	(4,868)	1,484,626	152
0.0000	3,049,596	1,484,626	344,381,250	(4,846)	1,491,054	152
0.0000	3,049,596	1,491,054	345,872,304	(4,824)	1,497,510	152
0.0000	3,049,596	1,497,510	347,369,813	(4,802)	1,503,993	152
0.0000	3,049,596	1,503,993	348,873,807	(4,779)	1,510,505	152
0.0000	3,049,596	1,510,505	350,384,312	(4,756)	1,517,045	152
0.0000	3,049,596	1,517,045	351,901,357	(4,733)	1,523,613	152
0.0000	3,049,596	1,523,613	353,424,970	(4,709)	1,530,210	152
0.0000	3,049,596	1,530,210	354,955,180	(4,686)	1,536,835	152
0.0000	3,049,596	1,536,835	356,492,015	(4,662)	1,543,489	152
0.0000	3,049,596	1,543,489	358,035,505	(4,637)	1,550,172	152
0.0000	3,049,596	1,550,172	359,585,677	(4,612)	1,556,884	152
0.0000	3,049,596	1,556,884	361,142,561	(4,587)	1,563,625	152
0.0000	3,049,596	1,563,625	362,706,185	(4,562)	1,570,395	152
0.0000	3,049,596	1,570,395	364,276,580	(4,537)	1,577,194	152
0.0000	3,049,596	1,577,194	365,853,774	(4,511)	1,584,023	152
0.0000	3,049,596	1,584,023	367,437,796	(4,484)	1,590,881	152
0.0000	3,049,596	1,590,881	369,028,677	(4,458)	1,597,769	152
0.0000	3,049,596	1,597,769	370,626,446	(4,431)	1,604,687	152
0.0000	3,049,596	1,604,687	372,231,133	(4,404)	1,611,634	152
0.0000	3,049,596	1,611,634	373,842,767	(4,376)	1,618,612	152
0.0000	3,049,596	1,618,612	375,461,379	(4,349)	1,625,620	152
0.0000	3,049,596	1,625,620	377,086,999	(4,320)	1,632,659	152
0.0000	3,049,596	1,632,659	378,719,658	(4,292)	1,639,727	152
0.0000	3,049,596	1,639,727	380,359,386	(4,263)	1,646,827	152
0.0000	3,049,596	1,646,827	382,006,212	(4,234)	1,653,957	152
0.0000	3,049,596	1,653,957	383,660,170	(4,205)	1,661,118	152
0.0000	3,049,596	1,661,118	385,321,288	(4,175)	1,668,310	152
0.0000	3,049,596	1,668,310	386,989,598	(4,145)	1,675,534	152
0.0000	3,049,596	1,675,534	388,665,132	(4,114)	1,682,788	152
0.0000	3,049,596	1,682,788	390,347,920	(4,083)	1,690,074	152
0.0000	3,049,596	1,690,074	392,037,994	(4,052)	1,697,391	152
0.0000	3,049,596	1,697,391	393,735,385	(4,021)	1,704,740	152
0.0000	3,049,596	1,704,740	395,440,125	(3,989)	1,712,121	152
0.0000	3,049,596	1,712,121	397,152,247	(3,957)	1,719,534	152
0.0000	3,049,596	1,719,534	398,871,781	(3,924)	1,726,979	152

10.0000	3,049,596	1,726,979	400,598,760	(3,891)	1,734,457	152
10.0000	3,049,596	1,734,457	402,333,217	(3,858)	1,741,966	152
10.0000	3,049,596	1,741,966	404,075,183	(3,824)	1,749,508	152
10.0000	3,049,596	1,749,508	405,824,691	(3,790)	1,757,083	152
10.0000	3,049,596	1,757,083	407,581,774	(3,756)	1,764,691	152
10.0000	3,049,596	1,764,691	409,346,465	(3,721)	1,772,331	152
10.0000	3,049,596	1,772,331	411,118,796	(3,686)	1,780,005	152
10.0000	3,049,596	1,780,005	412,898,801	(3,651)	1,787,712	152
10.0000	3,049,596	1,787,712	414,686,513	(3,615)	1,795,452	152
10.0000	3,049,596	1,795,452	416,481,964	(3,579)	1,803,225	152
10.0000	3,049,596	1,803,225	418,285,190	(3,542)	1,811,033	152
10.0000	3,049,596	1,811,033	420,096,222	(3,505)	1,818,874	152
10.0000	3,049,596	1,818,874	421,915,096	(3,468)	1,826,749	152
10.0000	3,049,596	1,826,749	423,741,845	(3,430)	1,834,658	152
10.0000	3,049,596	1,834,658	425,576,504	(3,392)	1,842,602	152
10.0000	3,049,596	1,842,602	427,419,105	(3,353)	1,850,580	152
10.0000	3,049,596	1,850,580	429,269,685	(3,314)	1,858,592	152
10.0000	3,049,596	1,858,592	431,128,277	(3,275)	1,866,639	152
10.0000	3,049,596	1,866,639	432,994,916	(3,235)	1,874,721	152
10.0000	3,049,596	1,874,721	434,869,637	(3,195)	1,882,838	152
10.0000	3,049,596	1,882,838	436,752,475	(3,155)	1,890,990	152
10.0000	3,049,596	1,890,990	438,643,464	(3,114)	1,899,177	152
10.0000	3,049,596	1,899,177	440,542,642	(3,072)	1,907,400	152
10.0000	3,049,596	1,907,400	442,450,042	(3,031)	1,915,658	152
10.0000	3,049,596	1,915,658	444,365,700	(2,988)	1,923,953	152
10.0000	3,049,596	1,923,953	446,289,653	(2,946)	1,932,283	152
10.0000	3,049,596	1,932,283	448,221,935	(2,903)	1,940,649	152
10.0000	3,049,596	1,940,649	450,162,584	(2,859)	1,949,051	152
10.0000	3,049,596	1,949,051	452,111,635	(2,815)	1,957,490	152
10.0000	3,049,596	1,957,490	454,069,125	(2,771)	1,965,965	152
10.0000	3,049,596	1,965,965	456,035,090	(2,726)	1,974,477	152
10.0000	3,049,596	1,974,477	458,009,567	(2,681)	1,983,026	152
10.0000	3,049,596	1,983,026	459,992,593	(2,635)	1,991,612	152
10.0000	3,049,596	1,991,612	461,984,204	(2,589)	2,000,235	152
10.0000	3,049,596	2,000,235	463,984,439	(2,542)	2,008,895	152
10.0000	3,049,596	2,008,895	465,993,334	(2,495)	2,017,593	152
10.0000	3,049,596	2,017,593	468,010,927	(2,448)	2,026,328	152
10.0000	3,049,596	2,026,328	470,037,255	(2,400)	2,035,102	152
10.0000	3,049,596	2,035,102	472,072,357	(2,352)	2,043,913	152
10.0000	3,049,596	2,043,913	474,116,270	(2,303)	2,052,762	152
10.0000	3,049,596	2,052,762	476,169,032	(2,253)	2,061,650	152
10.0000	3,049,596	2,061,650	478,230,682	(2,204)	2,070,576	152
10.0000	3,049,596	2,070,576	480,301,259	(2,153)	2,079,541	152
10.0000	3,049,596	2,079,541	482,380,800	(2,103)	2,088,545	152
10.0000	3,049,596	2,088,545	484,469,345	(2,051)	2,097,588	152
10.0000	3,049,596	2,097,588	486,566,933	(2,000)	2,106,670	152
10.0000	3,049,596	2,106,670	488,673,602	(1,947)	2,115,791	152
10.0000	3,049,596	2,115,791	490,789,393	(1,895)	2,124,951	152
10.0000	3,049,596	2,124,951	492,914,344	(1,842)	2,134,152	152
10.0000	3,049,596	2,134,152	495,048,496	(1,788)	2,143,392	152
10.0000	3,049,596	2,143,392	497,191,888	(1,734)	2,152,672	152
10.0000	3,049,596	2,152,672	499,344,560	(1,679)	2,161,992	152
10.0000	3,049,596	2,161,992	501,506,552	(1,624)	2,171,353	152
10.0000	3,049,596	2,171,353	503,677,905	(1,568)	2,180,754	152
10.0000	3,049,596	2,180,754	505,858,660	(1,512)	2,190,196	152
10.0000	3,049,596	2,190,196	508,048,856	(1,455)	2,199,679	152

0.0000	3,049,596	2,199,679	510,248,535	(1,398)	2,209,203	152
0.0000	3,049,596	2,209,203	512,457,737	(1,340)	2,218,768	152
0.0000	3,049,596	2,218,768	514,676,505	(1,282)	2,228,374	152
0.0000	3,049,596	2,228,374	516,904,880	(1,223)	2,238,023	152
0.0000	3,049,596	2,238,023	519,142,902	(1,164)	2,247,712	152
0.0000	3,049,596	2,247,712	521,390,615	(1,104)	2,257,444	152
0.0000	3,049,596	2,257,444	523,648,059	(1,043)	2,267,218	152
0.0000	3,049,596	2,267,218	525,915,277	(982)	2,277,035	152
0.0000	3,049,596	2,277,035	528,192,312	(921)	2,286,893	152
0.0000	3,049,596	2,286,893	530,479,205	(859)	2,296,795	152
0.0000	3,049,596	2,296,795	532,776,000	(796)	2,306,739	152
0.0000	3,049,596	2,306,739	535,082,739	(733)	2,316,727	152
0.0000	3,049,596	2,316,727	537,399,465	(669)	2,326,757	152
0.0000	3,049,596	2,326,757	539,726,223	(605)	2,336,831	152
0.0000	3,049,596	2,336,831	542,063,054	(540)	2,346,949	152
0.0000	3,049,596	2,346,949	544,410,003	(475)	2,357,110	152
0.0000	3,049,596	2,357,110	546,767,113	(409)	2,367,316	152
0.0000	3,049,596	2,367,316	549,134,429	(342)	2,377,566	152
0.0000	3,049,596	2,377,566	551,511,994	(275)	2,387,860	152
0.0000	3,049,596	2,387,860	553,899,854	(207)	2,398,198	152
0.0000	3,049,596	2,398,198	556,298,052	(139)	2,408,582	152
0.0000	3,049,596	2,408,582	558,706,634	(70)	2,419,010	152
0.0000	3,049,596	2,419,010	0	0	0	152
T $'000	(116,174)	(116,174)				

TABLE 4.4 (D)

Summary of Portfolio Daily Results

r t (%)	St. Line Accruals $	Mark to Market $	V t $	Portfolio Delta $	Portfolio Theta $	r V t t-1 Income (%)
6.8194	0	0	0	(2)	4,892,666	0
6.8194	18,321	4,892,666	4,892,666	(2,870)	2,677,609	0
6.8194	18,321	84	4,892,750	(2,868)	2,680,465	1,084
6.8194	18,321	84	4,892,834	(2,865)	2,683,322	1,093
6.8194	18,321	83	4,892,917	(2,862)	2,686,179	1,101
6.8194	18,321	82	4,892,999	(2,860)	2,689,038	1,109
6.8194	18,321	82	4,893,081	(2,857)	2,691,896	1,118
6.8194	18,321	81	4,893,162	(2,854)	2,694,755	1,127
6.8194	18,321	80	4,893,243	(2,852)	2,697,615	1,136
6.8194	18,321	80	4,893,323	(2,849)	2,700,476	1,145
6.8194	18,321	79	4,893,402	(2,847)	2,703,337	1,154
6.8194	18,321	79	4,893,481	(2,844)	2,706,198	1,163
6.8194	18,321	78	4,893,558	(2,841)	2,709,060	1,173
6.8194	18,321	77	4,893,636	(2,839)	2,711,923	1,182
6.8194	18,321	77	4,893,712	(2,836)	2,714,786	1,192
6.8194	18,321	76	4,893,789	(2,833)	2,717,650	1,202
6.8194	18,321	75	4,893,864	(2,831)	2,720,515	1,212
6.8194	18,321	75	4,893,939	(2,828)	2,723,380	1,223
6.8194	18,321	74	4,894,013	(2,826)	2,726,246	1,233
6.8194	18,321	73	4,894,086	(2,823)	2,729,112	1,244
6.8194	18,321	73	4,894,159	(2,820)	2,731,979	1,255
6.8194	18,321	72	4,894,231	(2,818)	2,734,846	1,266
6.8194	18,321	72	4,894,303	(2,815)	2,737,715	1,278
6.8194	18,321	71	4,894,374	(2,812)	2,740,583	1,289
6.8194	18,321	70	4,894,444	(2,810)	2,743,453	1,301
6.8194	18,321	70	4,894,514	(2,807)	2,746,322	1,313
6.8194	18,321	69	4,894,583	(2,804)	2,749,193	1,325
6.8194	18,321	68	4,894,651	(2,802)	2,752,064	1,338
6.8194	18,321	68	4,894,719	(2,799)	2,754,936	1,350
6.8194	18,321	67	4,894,786	(2,796)	2,757,808	1,363
6.8194	18,321	66	4,894,852	(2,794)	2,760,681	1,377
6.8194	18,321	66	4,894,918	(2,791)	2,763,554	1,390
6.8194	18,321	65	4,894,983	(2,789)	2,766,428	1,404
6.8194	18,321	64	4,895,048	(2,786)	2,769,303	1,418
6.8194	18,321	64	4,895,112	(2,783)	2,772,178	1,433
6.8194	18,321	63	4,895,175	(2,781)	2,775,054	1,447
6.8194	18,321	63	4,895,237	(2,778)	2,777,930	1,462
6.8194	18,321	62	4,895,299	(2,775)	2,780,807	1,478
6.8194	18,321	61	4,895,361	(2,773)	2,783,685	1,493
6.8194	18,321	61	4,895,421	(2,770)	2,786,563	1,509
6.8194	18,321	60	4,895,481	(2,767)	2,789,441	1,526
6.8194	18,321	59	4,895,540	(2,765)	2,792,321	1,543
6.8194	18,321	59	4,895,599	(2,762)	2,795,201	1,560
6.8194	18,321	58	4,895,657	(2,759)	2,798,081	1,577

6.8194	18,321	57	4,895,714	(2,757)	2,800,962	1,595
6.8194	18,321	57	4,895,771	(2,754)	2,803,844	1,614
6.8194	18,321	56	4,895,827	(2,751)	2,806,726	1,632
6.8194	18,321	55	4,895,882	(2,748)	2,809,609	1,652
6.8194	18,321	55	4,895,937	(2,746)	2,812,493	1,672
6.8194	18,321	54	4,895,991	(2,743)	2,815,377	1,692
6.8194	18,321	53	4,896,045	(2,740)	2,818,261	1,713
6.8194	18,321	53	4,896,097	(2,738)	2,821,147	1,734
6.8194	18,321	52	4,896,150	(2,735)	2,824,032	1,756
6.8194	18,321	51	4,896,201	(2,732)	2,826,919	1,778
6.8194	18,321	51	4,896,252	(2,730)	2,829,806	1,801
6.8194	18,321	50	4,896,302	(2,727)	2,832,693	1,825
6.8194	18,321	49	4,896,351	(2,724)	2,835,582	1,849
6.8194	18,321	49	4,896,400	(2,722)	2,838,470	1,874
6.8194	18,321	48	4,896,448	(2,719)	2,841,360	1,900
6.8194	18,321	47	4,896,496	(2,716)	2,844,250	1,927
6.8194	18,321	47	4,896,543	(2,714)	2,847,140	1,954
6.8194	18,321	46	4,896,589	(2,711)	2,850,032	1,982
6.8194	18,321	45	4,896,634	(2,708)	2,852,923	2,011
6.8194	18,321	45	4,896,679	(2,705)	2,855,816	2,040
6.8194	18,321	44	4,896,723	(2,703)	2,858,709	2,071
6.8194	18,321	44	4,896,767	(2,700)	2,861,602	2,103
6.8194	18,321	43	4,896,810	(2,697)	2,864,496	2,135
6.8194	18,321	42	4,896,852	(2,695)	2,867,391	2,169
6.8194	18,321	42	4,896,893	(2,692)	2,870,286	2,204
6.8194	18,321	41	4,896,934	(2,689)	2,873,182	2,240
6.8194	18,321	40	4,896,974	(2,687)	2,876,078	2,277
6.8194	18,321	40	4,897,014	(2,684)	2,878,975	2,315
6.8194	18,321	39	4,897,053	(2,681)	2,881,873	2,355
6.8194	18,321	38	4,897,091	(2,678)	2,884,771	2,396
6.8194	18,321	38	4,897,128	(2,676)	2,887,670	2,439
6.8194	18,321	37	4,897,165	(2,673)	2,890,570	2,483
6.8194	18,321	36	4,897,201	(2,670)	2,893,470	2,529
6.8194	18,321	36	4,897,237	(2,667)	2,896,370	2,577
6.8194	18,321	35	4,897,272	(2,665)	2,899,271	2,627
6.8194	18,321	34	4,897,306	(2,662)	2,902,173	2,679
6.8194	18,321	33	4,897,339	(2,659)	2,905,076	2,732
6.8194	18,321	33	4,897,372	(2,657)	2,907,978	2,788
6.8194	18,321	32	4,897,404	(2,654)	2,910,882	2,847
6.8194	18,321	31	4,897,436	(2,651)	2,913,786	2,908
6.8194	18,321	31	4,897,467	(2,648)	2,916,691	2,971
6.8194	18,321	30	4,897,497	(2,646)	2,919,596	3,038
6.8194	18,321	29	4,897,526	(2,643)	2,922,502	3,108
6.8194	18,321	29	4,897,555	(2,640)	2,925,409	3,181
6.8194	18,321	28	4,897,583	(2,637)	2,928,316	3,257
6.8194	18,321	27	4,897,610	(2,635)	2,931,223	3,338
6.8194	18,321	27	4,897,637	(2,632)	2,934,132	3,422
6.8194	18,321	26	4,897,663	(2,629)	2,937,040	3,511
6.8194	18,321	25	4,897,689	(2,626)	2,939,950	3,605
6.8194	18,321	25	4,897,713	(2,624)	2,942,860	3,704
6.8194	18,321	24	4,897,737	(2,621)	2,945,770	3,809
6.8194	18,321	23	4,897,761	(2,618)	2,948,682	3,920
6.8194	18,321	23	4,897,783	(2,616)	2,951,593	4,038
6.8194	18,321	22	4,897,805	(2,613)	2,954,506	4,163
6.8194	18,321	21	4,897,827	(2,610)	2,957,419	4,296
6.8194	18,321	21	4,897,847	(2,607)	2,960,332	4,439

6.8194	18,321	20	4,897,867	(2,605)	2,963,246	4,591
6.8194	18,321	19	4,897,886	(2,602)	2,966,161	4,754
6.8194	18,321	19	4,897,905	(2,599)	2,969,077	4,929
6.8194	18,321	18	4,897,923	(2,596)	2,971,992	5,117
6.8194	18,321	17	4,897,940	(2,593)	2,974,909	5,321
6.8194	18,321	17	4,897,957	(2,591)	2,977,826	5,542
6.8194	18,321	16	4,897,972	(2,588)	2,980,744	5,783
6.8194	18,321	15	4,897,988	(2,585)	2,983,662	6,045
6.8194	18,321	14	4,898,002	(2,582)	2,986,581	6,332
6.8194	18,321	14	4,898,016	(2,580)	2,989,500	6,649
6.8194	18,321	13	4,898,029	(2,577)	2,992,420	6,999
6.8194	18,321	12	4,898,041	(2,574)	2,995,341	7,388
6.8194	18,321	12	4,898,053	(2,571)	2,998,262	7,824
6.8194	18,321	11	4,898,064	(2,569)	3,001,184	8,314
6.8194	18,321	10	4,898,074	(2,566)	3,004,106	8,871
6.8194	18,321	10	4,898,084	(2,563)	3,007,029	9,508
6.8194	18,321	9	4,898,093	(2,560)	3,009,953	10,244
6.8194	18,321	8	4,898,101	(2,557)	3,012,877	11,105
6.8194	18,321	8	4,898,109	(2,555)	3,015,802	12,124
6.8194	18,321	7	4,898,115	(2,552)	3,018,727	13,351
6.8194	18,321	6	4,898,122	(2,549)	3,021,653	14,855
6.8194	18,321	5	4,898,127	(2,546)	3,024,579	16,742
6.8194	18,321	5	4,898,132	(2,544)	3,027,506	19,181
6.8194	18,321	4	4,898,136	(2,541)	3,030,434	22,455
6.8194	18,321	3	4,898,139	(2,538)	3,033,362	27,080
6.8194	18,321	3	4,898,142	(2,535)	3,036,291	34,114
6.8194	18,321	2	4,898,144	(2,532)	3,039,221	46,094
6.8194	18,321	1	4,898,145	(2,530)	3,042,151	71,077
6.8194	18,321	1	4,898,146	(2,527)	3,045,081	155,332
6.8194	18,321	(0)	4,898,146	(2,524)	3,048,013	-8E+05
6.8194	18,321	(1)	4,898,145	(2,521)	3,050,944	-1E+05
6.8194	18,321	(2)	4,898,143	(2,518)	3,053,877	(60,632)
6.8194	18,321	(2)	4,898,141	(2,516)	3,056,810	(41,410)
6.8194	18,321	(3)	4,898,138	(2,513)	3,059,743	(31,436)
6.8194	18,321	(4)	4,898,135	(2,510)	3,062,677	(25,330)
6.8194	18,321	(4)	4,898,130	(2,507)	3,065,612	(21,207)
6.8194	18,321	(5)	4,898,125	(2,504)	3,068,547	(18,237)
6.8194	18,321	(6)	4,898,120	(2,502)	3,071,483	(15,995)
6.8194	18,321	(6)	4,898,113	(2,499)	3,074,420	(14,242)
6.8194	18,321	(7)	4,898,106	(2,496)	3,077,357	(12,835)
6.8194	18,321	(8)	4,898,098	(2,493)	3,080,294	(11,680)
6.8194	18,321	(9)	4,898,090	(2,490)	3,083,233	(10,715)
6.8194	18,321	(9)	4,898,080	(2,488)	3,086,171	(9,897)
6.8194	18,321	(10)	4,898,070	(2,485)	3,089,111	(9,194)
6.8194	18,321	(11)	4,898,060	(2,482)	3,092,051	(8,584)
6.8194	18,321	(11)	4,898,048	(2,479)	3,094,991	(8,049)
6.8194	18,321	(12)	4,898,036	(2,476)	3,097,933	(7,577)
6.8194	18,321	(13)	4,898,024	(2,473)	3,100,874	(7,157)
6.8194	18,321	(13)	4,898,010	(2,471)	3,103,817	(6,781)
6.8194	18,321	(14)	4,897,996	(2,468)	3,106,760	(6,442)
6.8194	18,321	(15)	4,897,981	(2,465)	3,109,703	(6,135)
6.8194	18,321	(16)	4,897,965	(2,462)	3,112,647	(5,855)
6.8194	18,321	(16)	4,897,949	(2,459)	3,115,592	(5,600)
6.8194	18,321	(17)	4,897,932	(2,456)	3,118,537	(5,366)
6.8194	18,321	(18)	4,897,914	(2,454)	3,121,483	(5,151)
6.8194	18,321	(18)	4,897,896	(2,451)	3,124,430	(4,952)

6.8194	18,321	(19)	4,897,877	(2,448)	3,127,377	(4,768)
6.8194	18,321	(20)	4,897,857	(2,445)	3,130,324	(4,597)
6.8194	18,321	(21)	4,897,836	(2,442)	3,133,272	(4,437)
6.8194	18,321	(21)	4,897,815	(2,439)	3,136,221	(4,288)
6.8194	18,321	(22)	4,897,793	(2,437)	3,139,171	(4,149)
6.8194	18,321	(23)	4,897,770	(2,434)	3,142,121	(4,018)
6.8194	18,321	(23)	4,897,746	(2,431)	3,145,071	(3,896)
6.8194	18,321	(24)	4,897,722	(2,428)	3,148,022	(3,780)
6.8194	18,321	(25)	4,897,697	(2,425)	3,150,974	(3,671)
6.8194	18,321	(26)	4,897,672	(2,422)	3,153,926	(3,568)
6.8194	18,321	(26)	4,897,645	(2,419)	3,156,879	(3,471)
6.8194	18,321	(27)	4,897,618	(2,417)	3,159,833	(3,378)
6.8194	18,321	(28)	4,897,590	(2,414)	3,162,787	(3,291)
6.8194	18,321	(29)	4,897,562	(2,411)	3,165,741	(3,207)
6.8194	18,321	(29)	4,897,533	(2,408)	3,168,697	(3,128)
6.8194	18,321	(30)	4,897,503	(2,405)	3,171,652	(3,053)
6.8194	18,321	(31)	4,897,472	(2,402)	3,174,609	(2,981)
6.8194	18,321	(31)	4,897,440	(2,399)	3,177,566	(2,912)
6.8194	18,321	(32)	4,897,408	(2,397)	3,180,523	(2,846)
6.8194	18,321	(33)	4,897,375	(2,394)	3,183,482	(2,784)
6.8194	18,321	(34)	4,897,342	(2,391)	3,186,440	(2,724)
6.8194	18,321	(34)	4,897,307	(2,388)	3,189,400	(2,666)
6.8194	18,321	(35)	4,897,272	(2,385)	3,192,360	(2,611)
6.8194	18,321	(36)	4,897,237	(2,382)	3,195,320	(2,558)
6.8194	18,321	(37)	4,897,200	(2,379)	3,198,281	(2,507)
6.8194	18,321	(504)	1,580,507	(7,315)	3,200,633	(182)
6.8194	18,321	3,200,633	4,781,141	(9,340)	(5,172,392)	0
6.8194	18,321	2,315	4,783,455	(9,338)	(5,166,402)	39
6.8194	18,321	2,315	4,785,770	(9,336)	(5,160,410)	39
6.8194	18,321	2,314	4,788,084	(9,334)	(5,154,414)	39
6.8194	18,321	2,314	4,790,398	(9,332)	(5,148,416)	39
6.8194	18,321	2,314	4,792,712	(9,330)	(5,142,415)	39
6.8194	18,321	2,314	4,795,025	(9,328)	(5,136,412)	39
6.8194	18,321	2,313	4,797,339	(9,326)	(5,130,406)	39
6.8194	18,321	2,313	4,799,652	(9,324)	(5,124,398)	39
6.8194	18,321	2,313	4,801,964	(9,322)	(5,118,386)	39
6.8194	18,321	2,312	4,804,277	(9,320)	(5,112,372)	39
6.8194	18,321	2,312	4,806,589	(9,317)	(5,106,356)	39
6.8194	18,321	2,312	4,808,901	(9,315)	(5,100,337)	39
6.8194	18,321	2,312	4,811,213	(9,313)	(5,094,315)	39
6.8194	18,321	2,311	4,813,524	(9,311)	(5,088,290)	39
6.8194	18,321	2,311	4,815,835	(9,309)	(5,082,263)	39
6.8194	18,321	2,311	4,818,146	(9,307)	(5,076,234)	39
6.8194	18,321	2,311	4,820,457	(9,305)	(5,070,201)	39
6.8194	18,321	2,310	4,822,767	(9,303)	(5,064,166)	39
6.8194	18,321	2,310	4,825,077	(9,301)	(5,058,128)	39
6.8194	18,321	2,310	4,827,387	(9,298)	(5,052,088)	39
6.8194	18,321	2,310	4,829,696	(9,296)	(5,046,045)	39
6.8194	18,321	2,309	4,832,006	(9,294)	(5,039,999)	39
6.8194	18,321	2,309	4,834,315	(9,292)	(5,033,951)	39
6.8194	18,321	2,309	4,836,623	(9,290)	(5,027,900)	39
6.8194	18,321	2,308	4,838,932	(9,288)	(5,021,846)	39
6.8194	18,321	2,308	4,841,240	(9,286)	(5,015,790)	39
6.8194	18,321	2,308	4,843,548	(9,283)	(5,009,731)	39
6.8194	18,321	2,308	4,845,855	(9,281)	(5,003,669)	39
6.8194	18,321	2,307	4,848,163	(9,279)	(4,997,605)	39

6.8194	18,321	2,307	4,850,470	(9,277)	(4,991,538)	39
6.8194	18,321	2,307	4,852,777	(9,275)	(4,985,469)	39
6.8194	18,321	2,307	4,855,083	(9,273)	(4,979,396)	39
6.8194	18,321	2,306	4,857,389	(9,271)	(4,973,321)	39
6.8194	18,321	2,306	4,859,695	(9,268)	(4,967,244)	39
6.8194	18,321	2,306	4,862,001	(9,266)	(4,961,163)	39
6.8194	18,321	2,305	4,864,307	(9,264)	(4,955,080)	39
6.8194	18,321	2,305	4,866,612	(9,262)	(4,948,995)	39
6.8194	18,321	2,305	4,868,916	(9,260)	(4,942,907)	39
6.8194	18,321	2,305	4,871,221	(9,257)	(4,936,816)	39
6.8194	18,321	2,304	4,873,525	(9,255)	(4,930,722)	39
6.8194	18,321	2,304	4,875,829	(9,253)	(4,924,626)	40
6.8194	18,321	2,304	4,878,133	(9,251)	(4,918,527)	40
6.8194	18,321	2,303	4,880,436	(9,249)	(4,912,425)	40
6.8194	18,321	2,303	4,882,740	(9,247)	(4,906,321)	40
6.8194	18,321	2,303	4,885,042	(9,244)	(4,900,214)	40
6.8194	18,321	2,303	4,887,345	(9,242)	(4,894,104)	40
6.8194	18,321	2,302	4,889,647	(9,240)	(4,887,992)	40
6.8194	18,321	2,302	4,891,949	(9,238)	(4,881,877)	40
6.8194	18,321	2,302	4,894,251	(9,236)	(4,875,759)	40
6.8194	18,321	2,301	4,896,552	(9,233)	(4,869,638)	40
6.8194	18,321	2,301	4,898,854	(9,231)	(4,863,515)	40
6.8194	18,321	2,301	4,901,154	(9,229)	(4,857,390)	40
6.8194	18,321	2,301	4,903,455	(9,227)	(4,851,261)	40
6.8194	18,321	2,300	4,905,755	(9,224)	(4,845,130)	40
6.8194	18,321	2,300	4,908,055	(9,222)	(4,838,996)	40
6.8194	18,321	2,300	4,910,355	(9,220)	(4,832,860)	40
6.8194	18,321	2,299	4,912,654	(9,218)	(4,826,721)	40
6.8194	18,321	2,299	4,914,953	(9,215)	(4,820,579)	40
6.8194	18,321	2,299	4,917,252	(9,213)	(4,814,434)	40
6.8194	18,321	2,298	4,919,551	(9,211)	(4,808,287)	40
6.8194	18,321	2,298	4,921,849	(9,209)	(4,802,137)	40
6.8194	18,321	2,298	4,924,147	(9,207)	(4,795,984)	40
6.8194	18,321	2,298	4,926,444	(9,204)	(4,789,829)	40
6.8194	18,321	2,297	4,928,742	(9,202)	(4,783,671)	40
6.8194	18,321	2,297	4,931,039	(9,200)	(4,777,510)	40
6.8194	18,321	2,297	4,933,335	(9,197)	(4,771,347)	40
6.8194	18,321	2,296	4,935,632	(9,195)	(4,765,181)	40
6.8194	18,321	2,296	4,937,928	(9,193)	(4,759,012)	40
6.8194	18,321	2,296	4,940,224	(9,191)	(4,752,840)	40
6.8194	18,321	2,296	4,942,519	(9,188)	(4,746,666)	40
6.8194	18,321	2,295	4,944,814	(9,186)	(4,740,489)	40
6.8194	18,321	2,295	4,947,109	(9,184)	(4,734,310)	40
6.8194	18,321	2,295	4,949,404	(9,182)	(4,728,127)	40
6.8194	18,321	2,294	4,951,698	(9,179)	(4,721,942)	40
6.8194	18,321	2,294	4,953,992	(9,177)	(4,715,755)	40
6.8194	18,321	2,294	4,956,286	(9,175)	(4,709,564)	40
6.8194	18,321	2,293	4,958,579	(9,172)	(4,703,371)	40
6.8194	18,321	2,293	4,960,872	(9,170)	(4,697,175)	40
6.8194	18,321	2,293	4,963,165	(9,168)	(4,690,977)	40
6.8194	18,321	2,292	4,965,458	(9,166)	(4,684,776)	40
6.8194	18,321	2,292	4,967,750	(9,163)	(4,678,572)	40
6.8194	18,321	2,292	4,970,042	(9,161)	(4,672,365)	40
6.8194	18,321	2,292	4,972,333	(9,159)	(4,666,156)	41
6.8194	18,321	2,291	4,974,624	(9,156)	(4,659,943)	41
6.8194	18,321	2,291	4,976,915	(9,154)	(4,653,729)	41

6.8194	18,321	2,291	4,979,206	(9,152)	(4,647,511)	41
6.8194	18,321	2,290	4,981,496	(9,149)	(4,641,291)	41
6.8194	18,321	2,290	4,983,786	(9,147)	(4,635,068)	41
6.8194	18,321	2,290	4,986,076	(9,145)	(4,628,842)	41
6.8194	18,321	2,289	4,988,365	(9,142)	(4,622,614)	41
6.8194	18,321	2,289	4,990,654	(9,140)	(4,616,383)	41
6.8194	18,321	2,289	4,992,943	(9,138)	(4,610,149)	41
6.8194	18,321	2,288	4,995,231	(9,135)	(4,603,913)	41
6.8194	18,321	2,288	4,997,519	(9,133)	(4,597,673)	41
6.8194	18,321	2,288	4,999,807	(9,131)	(4,591,431)	41
6.8194	18,321	2,287	5,002,094	(9,128)	(4,585,187)	41
6.8194	18,321	2,287	5,004,381	(9,126)	(4,578,939)	41
6.8194	18,321	2,287	5,006,668	(9,124)	(4,572,689)	41
6.8194	18,321	2,286	5,008,954	(9,121)	(4,566,436)	41
6.8194	18,321	2,286	5,011,241	(9,119)	(4,560,181)	41
6.8194	18,321	2,286	5,013,526	(9,116)	(4,553,922)	41
6.8194	18,321	2,285	5,015,812	(9,114)	(4,547,661)	41
6.8194	18,321	2,285	5,018,097	(9,112)	(4,541,397)	41
6.8194	18,321	2,285	5,020,382	(9,109)	(4,535,131)	41
6.8194	18,321	2,284	5,022,666	(9,107)	(4,528,862)	41
6.8194	18,321	2,284	5,024,950	(9,105)	(4,522,590)	41
6.8194	18,321	2,284	5,027,234	(9,102)	(4,516,315)	41
6.8194	18,321	2,284	5,029,518	(9,100)	(4,510,037)	41
6.8194	18,321	2,283	5,031,801	(9,097)	(4,503,757)	41
6.8194	18,321	2,283	5,034,084	(9,095)	(4,497,474)	41
6.8194	18,321	2,283	5,036,366	(9,093)	(4,491,189)	41
6.8194	18,321	2,282	5,038,648	(9,090)	(4,484,900)	41
6.8194	18,321	2,282	5,040,930	(9,088)	(4,478,609)	41
6.8194	18,321	2,282	5,043,212	(9,085)	(4,472,315)	41
6.8194	18,321	2,281	5,045,493	(9,083)	(4,466,019)	41
6.8194	18,321	2,281	5,047,774	(9,081)	(4,459,719)	41
6.8194	18,321	2,281	5,050,054	(9,078)	(4,453,417)	41
6.8194	18,321	2,280	5,052,335	(9,076)	(4,447,112)	41
6.8194	18,321	2,280	5,054,614	(9,073)	(4,440,805)	41
6.8194	18,321	2,280	5,056,894	(9,071)	(4,434,495)	41
6.8194	18,321	2,279	5,059,173	(9,068)	(4,428,181)	41
6.8194	18,321	2,279	5,061,452	(9,066)	(4,421,866)	41
6.8194	18,321	2,278	5,063,730	(9,064)	(4,415,547)	42
6.8194	18,321	2,278	5,066,009	(9,061)	(4,409,226)	42
6.8194	18,321	2,278	5,068,286	(9,059)	(4,402,902)	42
6.8194	18,321	2,277	5,070,564	(9,056)	(4,396,575)	42
6.8194	18,321	2,277	5,072,841	(9,054)	(4,390,245)	42
6.8194	18,321	2,277	5,075,118	(9,051)	(4,383,913)	42
6.8194	18,321	2,276	5,077,394	(9,049)	(4,377,578)	42
6.8194	18,321	2,276	5,079,670	(9,046)	(4,371,240)	42
6.8194	18,321	2,276	5,081,946	(9,044)	(4,364,900)	42
6.8194	18,321	2,275	5,084,222	(9,042)	(4,358,556)	42
6.8194	18,321	2,275	5,086,497	(9,039)	(4,352,210)	42
6.8194	18,321	2,275	5,088,771	(9,037)	(4,345,861)	42
6.8194	18,321	2,274	5,091,046	(9,034)	(4,339,510)	42
6.8194	18,321	2,274	5,093,320	(9,032)	(4,333,155)	42
6.8194	18,321	2,274	5,095,593	(9,029)	(4,326,798)	42
6.8194	18,321	2,273	5,097,867	(9,027)	(4,320,438)	42
6.8194	18,321	2,273	5,100,140	(9,024)	(4,314,076)	42
6.8194	18,321	2,273	5,102,412	(9,022)	(4,307,710)	42
6.8194	18,321	2,272	5,104,685	(9,019)	(4,301,342)	42

6.8194	18,321	2,272	5,106,957	(9,017)	(4,294,971)	42
6.8194	18,321	2,272	5,109,228	(9,014)	(4,288,597)	42
6.8194	18,321	2,271	5,111,499	(9,012)	(4,282,221)	42
6.8194	18,321	2,271	5,113,770	(9,009)	(4,275,841)	42
6.8194	18,321	2,271	5,116,041	(9,007)	(4,269,459)	42
6.8194	18,321	2,270	5,118,311	(9,004)	(4,263,075)	42
6.8194	18,321	2,270	5,120,581	(9,002)	(4,256,687)	42
6.8194	18,321	2,269	5,122,850	(8,999)	(4,250,297)	42
6.8194	18,321	2,269	5,125,119	(8,997)	(4,243,904)	42
6.8194	18,321	2,269	5,127,388	(8,994)	(4,237,508)	42
6.8194	18,321	2,268	5,129,656	(8,992)	(4,231,109)	42
6.8194	18,321	2,268	5,131,924	(8,989)	(4,224,708)	42
6.8194	18,321	2,268	5,134,192	(8,987)	(4,218,303)	42
6.8194	18,321	2,267	5,136,459	(8,984)	(4,211,896)	42
6.8194	18,321	2,267	5,138,726	(8,982)	(4,205,487)	42
6.8194	18,321	2,267	5,140,993	(8,979)	(4,199,074)	42
6.8194	18,321	2,266	5,143,259	(8,977)	(4,192,659)	42
6.8194	18,321	2,266	5,145,525	(8,974)	(4,186,241)	42
6.8194	18,321	2,265	5,147,790	(8,971)	(4,179,820)	42
6.8194	18,321	2,265	5,150,055	(8,969)	(4,173,396)	42
6.8194	18,321	2,265	5,152,320	(8,966)	(4,166,970)	42
6.8194	18,321	2,264	5,154,584	(8,964)	(4,160,540)	43
6.8194	18,321	2,264	5,156,848	(8,961)	(4,154,108)	43
6.8194	18,321	2,264	5,159,112	(8,959)	(4,147,673)	43
6.8194	18,321	2,263	5,161,375	(8,956)	(4,141,236)	43
6.8194	18,321	2,263	5,163,638	(8,954)	(4,134,795)	43
6.8194	18,321	2,263	5,165,900	(8,951)	(4,128,352)	43
6.8194	18,321	2,262	5,168,162	(8,948)	(4,121,906)	43
6.8194	18,321	2,262	5,170,424	(8,946)	(4,115,457)	43
6.8194	18,321	2,261	5,172,686	(8,943)	(4,109,006)	43
6.8194	18,321	2,261	5,174,947	(8,941)	(4,102,551)	43
6.8194	18,321	2,261	5,177,207	(8,938)	(4,096,094)	43
6.8194	18,321	2,260	5,179,468	(8,935)	(4,089,634)	43
6.8194	18,321	2,260	5,181,727	(8,933)	(4,083,172)	43
6.8194	18,321	2,260	5,183,987	(8,930)	(4,076,706)	43
6.8194	18,321	2,259	5,186,246	(8,928)	(4,070,238)	43
6.8194	18,321	2,259	5,188,505	(8,925)	(4,063,766)	43
6.8194	18,321	2,258	5,190,763	(8,922)	(4,057,293)	43
6.8194	18,321	2,258	5,193,021	(8,920)	(4,050,816)	43
6.8194	18,321	2,258	5,195,279	(8,917)	(4,044,336)	43
6.8194	18,321	2,257	5,197,536	(8,915)	(4,037,854)	43
6.8194	18,321	2,411	1,828,793	(13,797)	(4,031,988)	40
6.8194	18,321	(4,031,988)	(2,203,195)	(11,825)	(2,499,774)	(0)
6.8194	18,321	8,125	(2,195,070)	(11,826)	(2,500,968)	(5)
6.8194	18,321	8,127	(2,186,943)	(11,827)	(2,502,163)	(5)
6.8194	18,321	8,130	(2,178,813)	(11,828)	(2,503,358)	(5)
6.8194	18,321	8,132	(2,170,681)	(11,829)	(2,504,553)	(5)
6.8194	18,321	8,134	(2,162,547)	(11,830)	(2,505,749)	(5)
6.8194	18,321	8,137	(2,154,411)	(11,831)	(2,506,944)	(5)
6.8194	18,321	8,139	(2,146,272)	(11,832)	(2,508,139)	(5)
6.8194	18,321	8,141	(2,138,131)	(11,832)	(2,509,335)	(5)
6.8194	18,321	8,143	(2,129,987)	(11,833)	(2,510,531)	(5)
6.8194	18,321	8,146	(2,121,842)	(11,834)	(2,511,726)	(5)
6.8194	18,321	8,148	(2,113,694)	(11,835)	(2,512,922)	(5)
6.8194	18,321	8,150	(2,105,543)	(11,836)	(2,514,118)	(5)
6.8194	18,321	8,153	(2,097,390)	(11,837)	(2,515,314)	(5)

6.8194	18,321	8,155	(2,089,235)	(11,838)	(2,516,510)	(5)
6.8194	18,321	8,157	(2,081,078)	(11,839)	(2,517,706)	(5)
6.8194	18,321	8,160	(2,072,919)	(11,839)	(2,518,902)	(5)
6.8194	18,321	8,162	(2,064,757)	(11,840)	(2,520,099)	(5)
6.8194	18,321	8,164	(2,056,592)	(11,841)	(2,521,295)	(5)
6.8194	18,321	8,167	(2,048,426)	(11,842)	(2,522,492)	(5)
6.8194	18,321	8,169	(2,040,257)	(11,843)	(2,523,688)	(5)
6.8194	18,321	8,171	(2,032,086)	(11,844)	(2,524,885)	(5)
6.8194	18,321	8,173	(2,023,912)	(11,844)	(2,526,082)	(5)
6.8194	18,321	8,176	(2,015,737)	(11,845)	(2,527,279)	(5)
6.8194	18,321	8,178	(2,007,558)	(11,846)	(2,528,476)	(5)
6.8194	18,321	8,180	(1,999,378)	(11,847)	(2,529,673)	(5)
6.8194	18,321	8,183	(1,991,195)	(11,848)	(2,530,870)	(5)
6.8194	18,321	8,185	(1,983,010)	(11,848)	(2,532,068)	(5)
6.8194	18,321	8,187	(1,974,823)	(11,849)	(2,533,265)	(5)
6.8194	18,321	8,190	(1,966,633)	(11,850)	(2,534,462)	(5)
6.8194	18,321	8,192	(1,958,441)	(11,851)	(2,535,660)	(4)
6.8194	18,321	8,194	(1,950,247)	(11,852)	(2,536,858)	(4)
6.8194	18,321	8,197	(1,942,050)	(11,852)	(2,538,055)	(4)
6.8194	18,321	8,199	(1,933,851)	(11,853)	(2,539,253)	(4)
6.8194	18,321	8,201	(1,925,650)	(11,854)	(2,540,451)	(4)
6.8194	18,321	8,204	(1,917,446)	(11,855)	(2,541,649)	(4)
6.8194	18,321	8,206	(1,909,241)	(11,855)	(2,542,847)	(4)
6.8194	18,321	8,208	(1,901,032)	(11,856)	(2,544,046)	(4)
6.8194	18,321	8,211	(1,892,822)	(11,857)	(2,545,244)	(4)
6.8194	18,321	8,213	(1,884,609)	(11,857)	(2,546,442)	(4)
6.8194	18,321	8,215	(1,876,394)	(11,858)	(2,547,641)	(4)
6.8194	18,321	8,217	(1,868,176)	(11,859)	(2,548,840)	(4)
6.8194	18,321	8,220	(1,859,957)	(11,860)	(2,550,038)	(4)
6.8194	18,321	8,222	(1,851,734)	(11,860)	(2,551,237)	(4)
6.8194	18,321	8,224	(1,843,510)	(11,861)	(2,552,436)	(4)
6.8194	18,321	8,227	(1,835,283)	(11,862)	(2,553,635)	(4)
6.8194	18,321	8,229	(1,827,054)	(11,862)	(2,554,834)	(4)
6.8194	18,321	8,231	(1,818,823)	(11,863)	(2,556,033)	(4)
6.8194	18,321	8,234	(1,810,589)	(11,864)	(2,557,232)	(4)
6.8194	18,321	8,236	(1,802,353)	(11,864)	(2,558,432)	(4)
6.8194	18,321	8,238	(1,794,115)	(11,865)	(2,559,631)	(4)
6.8194	18,321	8,241	(1,785,874)	(11,866)	(2,560,831)	(4)
6.8194	18,321	8,243	(1,777,631)	(11,866)	(2,562,030)	(4)
6.8194	18,321	8,245	(1,769,386)	(11,867)	(2,563,230)	(4)
6.8194	18,321	8,248	(1,761,138)	(11,868)	(2,564,430)	(4)
6.8194	18,321	8,250	(1,752,888)	(11,868)	(2,565,629)	(4)
6.8194	18,321	8,252	(1,744,636)	(11,869)	(2,566,829)	(4)
6.8194	18,321	8,255	(1,736,382)	(11,869)	(2,568,029)	(4)
6.8194	18,321	8,257	(1,728,125)	(11,870)	(2,569,230)	(4)
6.8194	18,321	8,259	(1,719,865)	(11,871)	(2,570,430)	(4)
6.8194	18,321	8,262	(1,711,604)	(11,871)	(2,571,630)	(4)
6.8194	18,321	8,264	(1,703,340)	(11,872)	(2,572,830)	(4)
6.8194	18,321	8,266	(1,695,074)	(11,873)	(2,574,031)	(4)
6.8194	18,321	8,268	(1,686,805)	(11,873)	(2,575,232)	(4)
6.8194	18,321	8,271	(1,678,535)	(11,874)	(2,576,432)	(4)
6.8194	18,321	8,273	(1,670,261)	(11,874)	(2,577,633)	(4)
6.8194	18,321	8,275	(1,661,986)	(11,875)	(2,578,834)	(4)
6.8194	18,321	8,278	(1,653,708)	(11,875)	(2,580,035)	(4)
6.8194	18,321	8,280	(1,645,428)	(11,876)	(2,581,236)	(4)
6.8194	18,321	8,282	(1,637,146)	(11,877)	(2,582,437)	(4)

6.8194	18,321	8,285	(1,628,861)	(11,877)	(2,583,638)	(4)
6.8194	18,321	8,287	(1,620,574)	(11,878)	(2,584,839)	(4)
6.8194	18,321	8,289	(1,612,285)	(11,878)	(2,586,041)	(4)
6.8194	18,321	8,292	(1,603,993)	(11,879)	(2,587,242)	(4)
6.8194	18,321	8,294	(1,595,699)	(11,879)	(2,588,444)	(4)
6.8194	18,321	8,296	(1,587,402)	(11,880)	(2,589,645)	(4)
6.8194	18,321	8,299	(1,579,104)	(11,880)	(2,590,847)	(4)
6.8194	18,321	8,301	(1,570,803)	(11,881)	(2,592,049)	(4)
6.8194	18,321	8,303	(1,562,499)	(11,881)	(2,593,251)	(4)
6.8194	18,321	8,306	(1,554,194)	(11,882)	(2,594,452)	(4)
6.8194	18,321	8,308	(1,545,886)	(11,882)	(2,595,655)	(3)
6.8194	18,321	8,310	(1,537,576)	(11,883)	(2,596,857)	(3)
6.8194	18,321	8,313	(1,529,263)	(11,883)	(2,598,059)	(3)
6.8194	18,321	8,315	(1,520,948)	(11,884)	(2,599,261)	(3)
6.8194	18,321	8,317	(1,512,631)	(11,884)	(2,600,464)	(3)
6.8194	18,321	8,320	(1,504,311)	(11,885)	(2,601,666)	(3)
6.8194	18,321	8,322	(1,495,989)	(11,885)	(2,602,869)	(3)
6.8194	18,321	8,324	(1,487,665)	(11,885)	(2,604,071)	(3)
6.8194	18,321	8,327	(1,479,338)	(11,886)	(2,605,274)	(3)
6.8194	18,321	8,329	(1,471,009)	(11,886)	(2,606,477)	(3)
6.8194	18,321	8,331	(1,462,678)	(11,887)	(2,607,680)	(3)
6.8194	18,321	8,334	(1,454,345)	(11,887)	(2,608,883)	(3)
6.8194	18,321	8,336	(1,446,009)	(11,888)	(2,610,086)	(3)
6.8194	18,321	8,338	(1,437,671)	(11,888)	(2,611,289)	(3)
6.8194	18,321	8,341	(1,429,330)	(11,888)	(2,612,492)	(3)
6.8194	18,321	8,343	(1,420,987)	(11,889)	(2,613,695)	(3)
6.8194	18,321	8,345	(1,412,642)	(11,889)	(2,614,899)	(3)
6.8194	18,321	8,348	(1,404,294)	(11,890)	(2,616,102)	(3)
6.8194	18,321	8,350	(1,395,945)	(11,890)	(2,617,306)	(3)
6.8194	18,321	8,352	(1,387,592)	(11,890)	(2,618,509)	(3)
6.8194	18,321	8,354	(1,379,238)	(11,891)	(2,619,713)	(3)
6.8194	18,321	8,357	(1,370,881)	(11,891)	(2,620,917)	(3)
6.8194	18,321	8,359	(1,362,522)	(11,892)	(2,622,121)	(3)
6.8194	18,321	8,361	(1,354,160)	(11,892)	(2,623,325)	(3)
6.8194	18,321	8,364	(1,345,797)	(11,892)	(2,624,529)	(3)
6.8194	18,321	8,366	(1,337,431)	(11,893)	(2,625,733)	(3)
6.8194	18,321	8,368	(1,329,062)	(11,893)	(2,626,937)	(3)
6.8194	18,321	8,371	(1,320,691)	(11,893)	(2,628,142)	(3)
6.8194	18,321	8,373	(1,312,318)	(11,894)	(2,629,346)	(3)
6.8194	18,321	8,375	(1,303,943)	(11,894)	(2,630,550)	(3)
6.8194	18,321	8,378	(1,295,565)	(11,894)	(2,631,755)	(3)
6.8194	18,321	8,380	(1,287,185)	(11,895)	(2,632,960)	(3)
6.8194	18,321	8,382	(1,278,802)	(11,895)	(2,634,164)	(3)
6.8194	18,321	8,385	(1,270,418)	(11,895)	(2,635,369)	(3)
6.8194	18,321	8,387	(1,262,030)	(11,895)	(2,636,574)	(3)
6.8194	18,321	8,389	(1,253,641)	(11,896)	(2,637,779)	(3)
6.8194	18,321	8,392	(1,245,249)	(11,896)	(2,638,984)	(3)
6.8194	18,321	8,394	(1,236,855)	(11,896)	(2,640,189)	(3)
6.8194	18,321	8,396	(1,228,459)	(11,897)	(2,641,394)	(3)
6.8194	18,321	8,399	(1,220,060)	(11,897)	(2,642,599)	(3)
6.8194	18,321	8,401	(1,211,659)	(11,897)	(2,643,805)	(3)
6.8194	18,321	8,403	(1,203,255)	(11,897)	(2,645,010)	(3)
6.8194	18,321	8,406	(1,194,850)	(11,898)	(2,646,216)	(3)
6.8194	18,321	8,408	(1,186,442)	(11,898)	(2,647,421)	(3)
6.8194	18,321	8,410	(1,178,031)	(11,898)	(2,648,627)	(3)
6.8194	18,321	8,413	(1,169,618)	(11,898)	(2,649,833)	(3)

6.8194	18,321	8,415	(1,161,203)	(11,899)	(2,651,039)	(3)
6.8194	18,321	8,417	(1,152,786)	(11,899)	(2,652,244)	(3)
6.8194	18,321	8,420	(1,144,366)	(11,899)	(2,653,450)	(3)
6.8194	18,321	8,422	(1,135,944)	(11,899)	(2,654,656)	(3)
6.8194	18,321	8,424	(1,127,520)	(11,899)	(2,655,863)	(3)
6.8194	18,321	8,427	(1,119,093)	(11,900)	(2,657,069)	(2)
6.8194	18,321	8,429	(1,110,664)	(11,900)	(2,658,275)	(2)
6.8194	18,321	8,431	(1,102,232)	(11,900)	(2,659,481)	(2)
6.8194	18,321	8,434	(1,093,799)	(11,900)	(2,660,688)	(2)
6.8194	18,321	8,436	(1,085,363)	(11,900)	(2,661,894)	(2)
6.8194	18,321	8,438	(1,076,924)	(11,900)	(2,663,101)	(2)
6.8194	18,321	8,441	(1,068,483)	(11,901)	(2,664,308)	(2)
6.8194	18,321	8,443	(1,060,040)	(11,901)	(2,665,514)	(2)
6.8194	18,321	8,445	(1,051,595)	(11,901)	(2,666,721)	(2)
6.8194	18,321	8,448	(1,043,147)	(11,901)	(2,667,928)	(2)
6.8194	18,321	8,450	(1,034,697)	(11,901)	(2,669,135)	(2)
6.8194	18,321	8,452	(1,026,245)	(11,901)	(2,670,342)	(2)
6.8194	18,321	8,455	(1,017,790)	(11,901)	(2,671,549)	(2)
6.8194	18,321	8,457	(1,009,333)	(11,902)	(2,672,756)	(2)
6.8194	18,321	8,459	(1,000,873)	(11,902)	(2,673,964)	(2)
6.8194	18,321	8,462	(992,412)	(11,902)	(2,675,171)	(2)
6.8194	18,321	8,464	(983,947)	(11,902)	(2,676,379)	(2)
6.8194	18,321	8,466	(975,481)	(11,902)	(2,677,586)	(2)
6.8194	18,321	8,469	(967,012)	(11,902)	(2,678,794)	(2)
6.8194	18,321	8,471	(958,541)	(11,902)	(2,680,001)	(2)
6.8194	18,321	8,473	(950,068)	(11,902)	(2,681,209)	(2)
6.8194	18,321	8,476	(941,592)	(11,902)	(2,682,417)	(2)
6.8194	18,321	8,478	(933,114)	(11,902)	(2,683,625)	(2)
6.8194	18,321	8,480	(924,633)	(11,902)	(2,684,833)	(2)
6.8194	18,321	8,483	(916,150)	(11,903)	(2,686,041)	(2)
6.8194	18,321	8,485	(907,665)	(11,903)	(2,687,249)	(2)
6.8194	18,321	8,487	(899,178)	(11,903)	(2,688,457)	(2)
6.8194	18,321	8,490	(890,688)	(11,903)	(2,689,665)	(2)
6.8194	18,321	8,492	(882,196)	(11,903)	(2,690,873)	(2)
6.8194	18,321	8,494	(873,701)	(11,903)	(2,692,082)	(2)
6.8194	18,321	8,497	(865,204)	(11,903)	(2,693,290)	(2)
6.8194	18,321	8,499	(856,705)	(11,903)	(2,694,499)	(2)
6.8194	18,321	8,502	(848,204)	(11,903)	(2,695,707)	(2)
6.8194	18,321	8,504	(839,700)	(11,903)	(2,696,916)	(2)
6.8194	18,321	8,506	(831,194)	(11,903)	(2,698,125)	(2)
6.8194	18,321	8,509	(822,685)	(11,903)	(2,699,334)	(2)
6.8194	18,321	8,511	(814,174)	(11,903)	(2,700,543)	(2)
6.8194	18,321	8,513	(805,661)	(11,903)	(2,701,752)	(2)
6.8194	18,321	8,516	(797,146)	(11,903)	(2,702,961)	(2)
6.8194	18,321	8,518	(788,628)	(11,903)	(2,704,170)	(2)
6.8194	18,321	8,520	(780,107)	(11,903)	(2,705,379)	(2)
6.8194	18,321	8,523	(771,585)	(11,903)	(2,706,588)	(2)
6.8194	18,321	8,525	(763,060)	(11,902)	(2,707,798)	(2)
6.8194	18,321	8,527	(754,533)	(11,902)	(2,709,007)	(2)
6.8194	18,321	8,530	(746,003)	(11,902)	(2,710,216)	(2)
6.8194	18,321	8,532	(737,471)	(11,902)	(2,711,426)	(2)
6.8194	18,321	8,534	(728,937)	(11,902)	(2,712,636)	(2)
6.8194	18,321	8,537	(720,400)	(11,902)	(2,713,845)	(2)
6.8194	18,321	8,539	(711,861)	(11,902)	(2,715,055)	(2)
6.8194	18,321	8,541	(703,320)	(11,902)	(2,716,265)	(2)
6.8194	18,321	8,077	(4,029,754)	(16,840)	(2,718,087)	(2)

.8194	18,321	(2,718,087)	(6,747,841)	(14,743)	(1,034,959)	0
.8194	18,321	6,723	(6,741,118)	(14,745)	(1,036,712)	(19)
.8194	18,321	6,725	(6,734,393)	(14,748)	(1,038,465)	(19)
.8194	18,321	6,727	(6,727,665)	(14,750)	(1,040,218)	(19)
.8194	18,321	6,730	(6,720,935)	(14,752)	(1,041,972)	(19)
.8194	18,321	6,732	(6,714,204)	(14,755)	(1,043,727)	(19)
.8194	18,321	6,734	(6,707,470)	(14,757)	(1,045,482)	(19)
.8194	18,321	6,736	(6,700,734)	(14,759)	(1,047,238)	(19)
.8194	18,321	6,738	(6,693,995)	(14,762)	(1,048,994)	(19)
.8194	18,321	6,740	(6,687,255)	(14,764)	(1,050,751)	(19)
.8194	18,321	6,743	(6,680,512)	(14,766)	(1,052,508)	(19)
.8194	18,321	6,745	(6,673,767)	(14,769)	(1,054,266)	(19)
.8194	18,321	6,747	(6,667,020)	(14,771)	(1,056,024)	(18)
.8194	18,321	6,749	(6,660,271)	(14,773)	(1,057,783)	(18)
.8194	18,321	6,751	(6,653,520)	(14,776)	(1,059,543)	(18)
.8194	18,321	6,753	(6,646,767)	(14,778)	(1,061,303)	(18)
.8194	18,321	6,756	(6,640,011)	(14,780)	(1,063,063)	(18)
.8194	18,321	6,758	(6,633,253)	(14,783)	(1,064,824)	(18)
.8194	18,321	6,760	(6,626,493)	(14,785)	(1,066,585)	(18)
.8194	18,321	6,762	(6,619,731)	(14,787)	(1,068,347)	(18)
.8194	18,321	6,764	(6,612,967)	(14,789)	(1,070,110)	(18)
.8194	18,321	6,766	(6,606,201)	(14,792)	(1,071,873)	(18)
.8194	18,321	6,769	(6,599,432)	(14,794)	(1,073,637)	(18)
.8194	18,321	6,771	(6,592,661)	(14,796)	(1,075,401)	(18)
.8194	18,321	6,773	(6,585,888)	(14,798)	(1,077,165)	(18)
.8194	18,321	6,775	(6,579,113)	(14,801)	(1,078,931)	(18)
.8194	18,321	6,777	(6,572,336)	(14,803)	(1,080,696)	(18)
.8194	18,321	6,779	(6,565,556)	(14,805)	(1,082,462)	(18)
.8194	18,321	6,782	(6,558,775)	(14,807)	(1,084,229)	(18)
.8194	18,321	6,784	(6,551,991)	(14,810)	(1,085,996)	(18)
.8194	18,321	6,786	(6,545,205)	(14,812)	(1,087,764)	(18)
.8194	18,321	6,788	(6,538,417)	(14,814)	(1,089,533)	(18)
.8194	18,321	6,790	(6,531,627)	(14,816)	(1,091,302)	(18)
.8194	18,321	6,792	(6,524,834)	(14,819)	(1,093,071)	(18)
.8194	18,321	6,795	(6,518,040)	(14,821)	(1,094,841)	(18)
.8194	18,321	6,797	(6,511,243)	(14,823)	(1,096,611)	(18)
.8194	18,321	6,799	(6,504,444)	(14,825)	(1,098,382)	(18)
.8194	18,321	6,801	(6,497,643)	(14,828)	(1,100,154)	(18)
.8194	18,321	6,803	(6,490,839)	(14,830)	(1,101,926)	(18)
.8194	18,321	6,805	(6,484,034)	(14,832)	(1,103,698)	(18)
.8194	18,321	6,808	(6,477,226)	(14,834)	(1,105,471)	(18)
.8194	18,321	6,810	(6,470,416)	(14,836)	(1,107,245)	(18)
.8194	18,321	6,812	(6,463,604)	(14,838)	(1,109,019)	(18)
.8194	18,321	6,814	(6,456,790)	(14,841)	(1,110,794)	(18)
.8194	18,321	6,816	(6,449,974)	(14,843)	(1,112,569)	(18)
.8194	18,321	6,819	(6,443,155)	(14,845)	(1,114,345)	(18)
.8194	18,321	6,821	(6,436,335)	(14,847)	(1,116,121)	(18)
.8194	18,321	6,823	(6,429,512)	(14,849)	(1,117,898)	(18)
.8194	18,321	6,825	(6,422,687)	(14,851)	(1,119,675)	(18)
.8194	18,321	6,827	(6,415,860)	(14,854)	(1,121,453)	(18)
.8194	18,321	6,829	(6,409,030)	(14,856)	(1,123,231)	(18)
.8194	18,321	6,832	(6,402,199)	(14,858)	(1,125,010)	(18)
.8194	18,321	6,834	(6,395,365)	(14,860)	(1,126,790)	(18)
.8194	18,321	6,836	(6,388,529)	(14,862)	(1,128,569)	(17)
.8194	18,321	6,838	(6,381,691)	(14,864)	(1,130,350)	(17)
.8194	18,321	6,840	(6,374,851)	(14,866)	(1,132,131)	(17)

6.8194	18,321	6,842	(6,368,008)	(14,869)	(1,133,913)	(17)
6.8194	18,321	6,845	(6,361,163)	(14,871)	(1,135,695)	(17)
6.8194	18,321	6,847	(6,354,317)	(14,873)	(1,137,477)	(17)
6.8194	18,321	6,849	(6,347,468)	(14,875)	(1,139,260)	(17)
6.8194	18,321	6,851	(6,340,616)	(14,877)	(1,141,044)	(17)
6.8194	18,321	6,853	(6,333,763)	(14,879)	(1,142,828)	(17)
6.8194	18,321	6,856	(6,326,908)	(14,881)	(1,144,613)	(17)
6.8194	18,321	6,858	(6,320,050)	(14,883)	(1,146,398)	(17)
6.8194	18,321	6,860	(6,313,190)	(14,885)	(1,148,184)	(17)
6.8194	18,321	6,862	(6,306,328)	(14,887)	(1,149,970)	(17)
6.8194	18,321	6,864	(6,299,464)	(14,889)	(1,151,757)	(17)
6.8194	18,321	6,866	(6,292,597)	(14,891)	(1,153,544)	(17)
6.8194	18,321	6,869	(6,285,729)	(14,894)	(1,155,332)	(17)
6.8194	18,321	6,871	(6,278,858)	(14,896)	(1,157,121)	(17)
6.8194	18,321	6,873	(6,271,985)	(14,898)	(1,158,910)	(17)
6.8194	18,321	6,875	(6,265,110)	(14,900)	(1,160,699)	(17)
6.8194	18,321	6,877	(6,258,232)	(14,902)	(1,162,489)	(17)
6.8194	18,321	6,880	(6,251,353)	(14,904)	(1,164,280)	(17)
6.8194	18,321	6,882	(6,244,471)	(14,906)	(1,166,071)	(17)
6.8194	18,321	6,884	(6,237,587)	(14,908)	(1,167,862)	(17)
6.8194	18,321	6,886	(6,230,701)	(14,910)	(1,169,654)	(17)
6.8194	18,321	6,888	(6,223,813)	(14,912)	(1,171,447)	(17)
6.8194	18,321	6,890	(6,216,923)	(14,914)	(1,173,240)	(17)
6.8194	18,321	6,893	(6,210,030)	(14,916)	(1,175,034)	(17)
6.8194	18,321	6,895	(6,203,135)	(14,918)	(1,176,828)	(17)
6.8194	18,321	6,897	(6,196,238)	(14,920)	(1,178,623)	(17)
6.8194	18,321	6,899	(6,189,339)	(14,922)	(1,180,418)	(17)
6.8194	18,321	6,901	(6,182,438)	(14,924)	(1,182,214)	(17)
6.8194	18,321	6,904	(6,175,534)	(14,926)	(1,184,011)	(17)
6.8194	18,321	6,906	(6,168,628)	(14,928)	(1,185,807)	(17)
6.8194	18,321	6,908	(6,161,720)	(14,930)	(1,187,605)	(17)
6.8194	18,321	6,910	(6,154,810)	(14,932)	(1,189,403)	(17)
6.8194	18,321	6,912	(6,147,898)	(14,934)	(1,191,201)	(17)
6.8194	18,321	6,914	(6,140,984)	(14,936)	(1,193,000)	(17)
6.8194	18,321	6,917	(6,134,067)	(14,938)	(1,194,800)	(17)
6.8194	18,321	6,919	(6,127,148)	(14,940)	(1,196,600)	(17)
6.8194	18,321	6,921	(6,120,227)	(14,942)	(1,198,401)	(17)
6.8194	18,321	6,923	(6,113,304)	(14,944)	(1,200,202)	(17)
6.8194	18,321	6,925	(6,106,378)	(14,945)	(1,202,004)	(16)
6.8194	18,321	6,928	(6,099,451)	(14,947)	(1,203,806)	(16)
6.8194	18,321	6,930	(6,092,521)	(14,949)	(1,205,608)	(16)
6.8194	18,321	6,932	(6,085,589)	(14,951)	(1,207,412)	(16)
6.8194	18,321	6,934	(6,078,655)	(14,953)	(1,209,216)	(16)
6.8194	18,321	6,936	(6,071,718)	(14,955)	(1,211,020)	(16)
6.8194	18,321	6,939	(6,064,780)	(14,957)	(1,212,825)	(16)
6.8194	18,321	6,941	(6,057,839)	(14,959)	(1,214,630)	(16)
6.8194	18,321	6,943	(6,050,896)	(14,961)	(1,216,436)	(16)
6.8194	18,321	6,945	(6,043,951)	(14,963)	(1,218,243)	(16)
6.8194	18,321	6,947	(6,037,004)	(14,965)	(1,220,050)	(16)
6.8194	18,321	6,950	(6,030,054)	(14,966)	(1,221,857)	(16)
6.8194	18,321	6,952	(6,023,103)	(14,968)	(1,223,665)	(16)
6.8194	18,321	6,954	(6,016,149)	(14,970)	(1,225,474)	(16)
6.8194	18,321	6,956	(6,009,193)	(14,972)	(1,227,283)	(16)
6.8194	18,321	6,958	(6,002,234)	(14,974)	(1,229,093)	(16)
6.8194	18,321	6,960	(5,995,274)	(14,976)	(1,230,903)	(16)
6.8194	18,321	6,963	(5,988,311)	(14,978)	(1,232,714)	(16)

.8194	18,321	6,965	(5,981,346)	(14,979)	(1,234,525)	(16)
.8194	18,321	6,967	(5,974,379)	(14,981)	(1,236,337)	(16)
.8194	18,321	6,969	(5,967,410)	(14,983)	(1,238,149)	(16)
.8194	18,321	6,971	(5,960,438)	(14,985)	(1,239,962)	(16)
.8194	18,321	6,974	(5,953,465)	(14,987)	(1,241,775)	(16)
.8194	18,321	6,976	(5,946,489)	(14,989)	(1,243,589)	(16)
.8194	18,321	6,978	(5,939,511)	(14,990)	(1,245,404)	(16)
.8194	18,321	6,980	(5,932,531)	(14,992)	(1,247,219)	(16)
.8194	18,321	6,982	(5,925,548)	(14,994)	(1,249,034)	(16)
.8194	18,321	6,985	(5,918,564)	(14,996)	(1,250,850)	(16)
.8194	18,321	6,987	(5,911,577)	(14,998)	(1,252,667)	(16)
.8194	18,321	6,989	(5,904,588)	(15,000)	(1,254,484)	(16)
.8194	18,321	6,991	(5,897,597)	(15,001)	(1,256,302)	(16)
.8194	18,321	6,993	(5,890,603)	(15,003)	(1,258,120)	(16)
.8194	18,321	6,996	(5,883,607)	(15,005)	(1,259,939)	(16)
.8194	18,321	6,998	(5,876,610)	(15,007)	(1,261,758)	(16)
.8194	18,321	7,000	(5,869,610)	(15,008)	(1,263,578)	(16)
.8194	18,321	7,002	(5,862,607)	(15,010)	(1,265,398)	(16)
.8194	18,321	7,004	(5,855,603)	(15,012)	(1,267,219)	(16)
.8194	18,321	7,007	(5,848,596)	(15,014)	(1,269,040)	(16)
.8194	18,321	7,009	(5,841,588)	(15,015)	(1,270,862)	(16)
.8194	18,321	7,011	(5,834,577)	(15,017)	(1,272,685)	(16)
.8194	18,321	7,013	(5,827,563)	(15,019)	(1,274,508)	(16)
.8194	18,321	7,015	(5,820,548)	(15,021)	(1,276,331)	(16)
.8194	18,321	7,018	(5,813,530)	(15,022)	(1,278,155)	(15)
.8194	18,321	7,020	(5,806,510)	(15,024)	(1,279,980)	(15)
.8194	18,321	7,022	(5,799,488)	(15,026)	(1,281,805)	(15)
.8194	18,321	7,024	(5,792,464)	(15,028)	(1,283,631)	(15)
.8194	18,321	7,026	(5,785,438)	(15,029)	(1,285,457)	(15)
.8194	18,321	7,029	(5,778,409)	(15,031)	(1,287,284)	(15)
.8194	18,321	7,031	(5,771,378)	(15,033)	(1,289,111)	(15)
.8194	18,321	7,033	(5,764,345)	(15,034)	(1,290,939)	(15)
.8194	18,321	7,035	(5,757,310)	(15,036)	(1,292,767)	(15)
.8194	18,321	7,037	(5,750,272)	(15,038)	(1,294,596)	(15)
.8194	18,321	7,040	(5,743,233)	(15,040)	(1,296,426)	(15)
.8194	18,321	7,042	(5,736,191)	(15,041)	(1,298,256)	(15)
.8194	18,321	7,044	(5,729,147)	(15,043)	(1,300,086)	(15)
.8194	18,321	7,046	(5,722,101)	(15,045)	(1,301,917)	(15)
.8194	18,321	7,048	(5,715,052)	(15,046)	(1,303,749)	(15)
.8194	18,321	7,051	(5,708,001)	(15,048)	(1,305,581)	(15)
.8194	18,321	7,053	(5,700,948)	(15,050)	(1,307,413)	(15)
.8194	18,321	7,055	(5,693,893)	(15,051)	(1,309,247)	(15)
.8194	18,321	7,057	(5,686,836)	(15,053)	(1,311,080)	(15)
.8194	18,321	7,060	(5,679,777)	(15,054)	(1,312,915)	(15)
.8194	18,321	7,062	(5,672,715)	(15,056)	(1,314,749)	(15)
.8194	18,321	7,064	(5,665,651)	(15,058)	(1,316,585)	(15)
.8194	18,321	7,066	(5,658,585)	(15,059)	(1,318,421)	(15)
.8194	18,321	7,068	(5,651,516)	(15,061)	(1,320,257)	(15)
.8194	18,321	7,071	(5,644,446)	(15,063)	(1,322,094)	(15)
.8194	18,321	7,073	(5,637,373)	(15,064)	(1,323,931)	(15)
.8194	18,321	7,075	(5,630,298)	(15,066)	(1,325,769)	(15)
.8194	18,321	7,077	(5,623,221)	(15,067)	(1,327,608)	(15)
.8194	18,321	7,079	(5,616,142)	(15,069)	(1,329,447)	(15)
.8194	18,321	7,082	(5,609,060)	(15,071)	(1,331,287)	(15)
.8194	18,321	7,084	(5,601,976)	(15,072)	(1,333,127)	(15)
.8194	18,321	7,086	(5,594,890)	(15,074)	(1,334,967)	(15)

6.8194	18,321	7,088	(5,587,802)	(15,075)	(1,336,809)	(15)
6.8194	18,321	7,090	(5,580,711)	(15,077)	(1,338,650)	(15)
6.8194	18,321	7,093	(5,573,619)	(15,078)	(1,340,493)	(15)
6.8194	18,321	7,095	(5,566,524)	(15,080)	(1,342,336)	(15)
6.8194	18,321	7,097	(5,559,427)	(15,082)	(1,344,179)	(15)
6.8194	18,321	7,099	(5,552,327)	(15,083)	(1,346,023)	(15)
6.8194	18,321	7,102	(5,545,226)	(15,085)	(1,347,867)	(15)
6.8194	18,321	7,104	(5,538,122)	(15,086)	(1,349,712)	(15)
6.8194	18,321	7,106	(5,531,016)	(15,088)	(1,351,558)	(15)
6.8194	18,321	7,108	(5,523,908)	(15,089)	(1,353,404)	(15)
6.8194	18,321	7,110	(5,516,798)	(15,091)	(1,355,250)	(15)
6.8194	18,321	7,113	(5,509,685)	(15,092)	(1,357,098)	(14)
6.8194	18,321	7,115	(5,502,570)	(15,094)	(1,358,945)	(14)
6.8194	18,321	7,117	(5,495,453)	(15,095)	(1,360,793)	(14)
6.8194	18,321	7,119	(5,488,334)	(15,097)	(1,362,642)	(14)
6.8194	18,321	5,858	(8,853,629)	(1,733)	(1,365,111)	(18)
6.8194	39,938	(1,365,111)	(10,218,740)	(459)	3,463,635	0
6.8194	39,938	4,654	(10,214,086)	(459)	3,457,897	(41)
6.8194	39,938	4,656	(10,209,431)	(459)	3,452,155	(41)
6.8194	39,938	4,657	(10,204,773)	(459)	3,446,411	(41)
6.8194	39,938	4,659	(10,200,115)	(459)	3,440,665	(41)
6.8194	39,938	4,660	(10,195,454)	(460)	3,434,915	(41)
6.8194	39,938	4,662	(10,190,792)	(460)	3,429,163	(41)
6.8194	39,938	4,663	(10,186,129)	(460)	3,423,408	(41)
6.8194	39,938	4,665	(10,181,464)	(460)	3,417,651	(41)
6.8194	39,938	4,667	(10,176,797)	(460)	3,411,891	(41)
6.8194	39,938	4,668	(10,172,129)	(460)	3,406,128	(41)
6.8194	39,938	4,670	(10,167,459)	(460)	3,400,362	(41)
6.8194	39,938	4,671	(10,162,788)	(461)	3,394,594	(41)
6.8194	39,938	4,673	(10,158,115)	(461)	3,388,823	(41)
6.8194	39,938	4,674	(10,153,441)	(461)	3,383,049	(41)
6.8194	39,938	4,676	(10,148,765)	(461)	3,377,273	(41)
6.8194	39,938	4,678	(10,144,087)	(461)	3,371,494	(41)
6.8194	39,938	4,679	(10,139,408)	(461)	3,365,713	(41)
6.8194	39,938	4,681	(10,134,727)	(461)	3,359,928	(40)
6.8194	39,938	4,682	(10,130,045)	(461)	3,354,141	(40)
6.8194	39,938	4,684	(10,125,361)	(461)	3,348,351	(40)
6.8194	39,938	4,685	(10,120,676)	(461)	3,342,559	(40)
6.8194	39,938	4,687	(10,115,989)	(462)	3,336,764	(40)
6.8194	39,938	4,689	(10,111,300)	(462)	3,330,966	(40)
6.8194	39,938	4,690	(10,106,610)	(462)	3,325,165	(40)
6.8194	39,938	4,692	(10,101,918)	(462)	3,319,362	(40)
6.8194	39,938	4,693	(10,097,225)	(462)	3,313,556	(40)
6.8194	39,938	4,695	(10,092,530)	(462)	3,307,748	(40)
6.8194	39,938	4,696	(10,087,834)	(462)	3,301,936	(40)
6.8194	39,938	4,698	(10,083,136)	(462)	3,296,122	(40)
6.8194	39,938	4,700	(10,078,436)	(462)	3,290,305	(40)
6.8194	39,938	4,701	(10,073,735)	(462)	3,284,486	(40)
6.8194	39,938	4,703	(10,069,032)	(462)	3,278,664	(40)
6.8194	39,938	4,704	(10,064,328)	(462)	3,272,839	(40)
6.8194	39,938	4,706	(10,059,622)	(462)	3,267,011	(40)
6.8194	39,938	4,707	(10,054,915)	(462)	3,261,181	(40)
6.8194	39,938	4,709	(10,050,206)	(462)	3,255,348	(40)
6.8194	39,938	4,711	(10,045,495)	(462)	3,249,513	(40)
6.8194	39,938	4,712	(10,040,783)	(462)	3,243,674	(40)
6.8194	39,938	4,714	(10,036,069)	(462)	3,237,833	(40)

6.8194	39,938	4,715	(10,031,354)	(462)	3,231,989	(40)
6.8194	39,938	4,717	(10,026,637)	(462)	3,226,143	(40)
6.8194	39,938	4,718	(10,021,919)	(462)	3,220,293	(40)
6.8194	39,938	4,720	(10,017,199)	(462)	3,214,441	(40)
6.8194	39,938	4,722	(10,012,477)	(462)	3,208,587	(40)
6.8194	39,938	4,723	(10,007,754)	(462)	3,202,729	(40)
6.8194	39,938	4,725	(10,003,029)	(462)	3,196,869	(40)
6.8194	39,938	4,726	(9,998,303)	(462)	3,191,006	(40)
6.8194	39,938	4,728	(9,993,575)	(462)	3,185,141	(40)
6.8194	39,938	4,729	(9,988,846)	(462)	3,179,273	(39)
6.8194	39,938	4,731	(9,984,115)	(462)	3,173,402	(39)
6.8194	39,938	4,733	(9,979,382)	(462)	3,167,528	(39)
6.8194	39,938	4,734	(9,974,648)	(462)	3,161,651	(39)
6.8194	39,938	4,736	(9,969,912)	(462)	3,155,772	(39)
6.8194	39,938	4,737	(9,965,175)	(462)	3,149,890	(39)
6.8194	39,938	4,739	(9,960,436)	(462)	3,144,006	(39)
6.8194	39,938	4,740	(9,955,695)	(462)	3,138,118	(39)
6.8194	39,938	4,742	(9,950,953)	(462)	3,132,228	(39)
6.8194	39,938	4,744	(9,946,210)	(462)	3,126,336	(39)
6.8194	39,938	4,745	(9,941,465)	(462)	3,120,440	(39)
6.8194	39,938	4,747	(9,936,718)	(462)	3,114,542	(39)
6.8194	39,938	4,748	(9,931,969)	(462)	3,108,641	(39)
6.8194	39,938	4,750	(9,927,220)	(462)	3,102,737	(39)
6.8194	39,938	4,752	(9,922,468)	(461)	3,096,831	(39)
6.8194	39,938	4,753	(9,917,715)	(461)	3,090,921	(39)
6.8194	39,938	4,755	(9,912,960)	(461)	3,085,010	(39)
6.8194	39,938	4,756	(9,908,204)	(461)	3,079,095	(39)
6.8194	39,938	4,758	(9,903,446)	(461)	3,073,178	(39)
6.8194	39,938	4,759	(9,898,687)	(461)	3,067,257	(39)
6.8194	39,938	4,761	(9,893,926)	(461)	3,061,335	(39)
6.8194	39,938	4,763	(9,889,163)	(461)	3,055,409	(39)
6.8194	39,938	4,764	(9,884,399)	(461)	3,049,481	(39)
6.8194	39,938	4,766	(9,879,633)	(460)	3,043,549	(39)
6.8194	39,938	4,767	(9,874,866)	(460)	3,037,616	(39)
6.8194	39,938	4,769	(9,870,097)	(460)	3,031,679	(39)
6.8194	39,938	4,770	(9,865,327)	(460)	3,025,740	(39)
6.8194	39,938	4,772	(9,860,555)	(460)	3,019,798	(39)
6.8194	39,938	4,774	(9,855,781)	(460)	3,013,853	(39)
6.8194	39,938	4,775	(9,851,006)	(460)	3,007,905	(39)
6.8194	39,938	4,777	(9,846,229)	(460)	3,001,955	(39)
6.8194	39,938	4,778	(9,841,451)	(459)	2,996,002	(38)
6.8194	39,938	4,780	(9,836,671)	(459)	2,990,046	(38)
6.8194	39,938	4,782	(9,831,889)	(459)	2,984,088	(38)
6.8194	39,938	4,783	(9,827,106)	(459)	2,978,126	(38)
6.8194	39,938	4,785	(9,822,322)	(459)	2,972,162	(38)
6.8194	39,938	4,786	(9,817,535)	(459)	2,966,196	(38)
6.8194	39,938	4,788	(9,812,748)	(458)	2,960,226	(38)
6.8194	39,938	4,789	(9,807,958)	(458)	2,954,254	(38)
6.8194	39,938	4,791	(9,803,167)	(458)	2,948,279	(38)
6.8194	39,938	4,793	(9,798,375)	(458)	2,942,301	(38)
6.8194	39,938	4,794	(9,793,580)	(458)	2,936,320	(38)
6.8194	39,938	4,796	(9,788,785)	(457)	2,930,337	(38)
6.8194	39,938	4,797	(9,783,987)	(457)	2,924,351	(38)
6.8194	39,938	4,799	(9,779,188)	(457)	2,918,362	(38)
6.8194	39,938	4,801	(9,774,388)	(457)	2,912,370	(38)
6.8194	39,938	4,802	(9,769,586)	(457)	2,906,376	(38)

6.8194	39,938	4,804	(9,764,782)	(456)	2,900,379	(38)
6.8194	39,938	4,805	(9,759,977)	(456)	2,894,379	(38)
6.8194	39,938	4,807	(9,755,170)	(456)	2,888,376	(38)
6.8194	39,938	4,808	(9,750,362)	(456)	2,882,371	(38)
6.8194	39,938	4,810	(9,745,552)	(455)	2,876,363	(38)
6.8194	39,938	4,812	(9,740,740)	(455)	2,870,352	(38)
6.8194	39,938	4,813	(9,735,927)	(455)	2,864,338	(38)
6.8194	39,938	4,815	(9,731,112)	(455)	2,858,322	(38)
6.8194	39,938	4,816	(9,726,296)	(454)	2,852,302	(38)
6.8194	39,938	4,818	(9,721,478)	(454)	2,846,280	(38)
6.8194	39,938	4,820	(9,716,658)	(454)	2,840,256	(38)
6.8194	39,938	4,821	(9,711,837)	(454)	2,834,228	(38)
6.8194	39,938	4,823	(9,707,014)	(453)	2,828,198	(38)
6.8194	39,938	4,824	(9,702,190)	(453)	2,822,165	(38)
6.8194	39,938	4,826	(9,697,364)	(453)	2,816,129	(38)
6.8194	39,938	4,827	(9,692,537)	(452)	2,810,090	(38)
6.8194	39,938	4,829	(9,687,708)	(452)	2,804,049	(37)
6.8194	39,938	4,831	(9,682,877)	(452)	2,798,004	(37)
6.8194	39,938	4,832	(9,678,045)	(452)	2,791,957	(37)
6.8194	39,938	4,834	(9,673,211)	(451)	2,785,908	(37)
6.8194	39,938	4,835	(9,668,376)	(451)	2,779,855	(37)
6.8194	39,938	4,837	(9,663,539)	(451)	2,773,800	(37)
6.8194	39,938	4,839	(9,658,700)	(450)	2,767,741	(37)
6.8194	39,938	4,840	(9,653,860)	(450)	2,761,681	(37)
6.8194	39,938	4,842	(9,649,018)	(450)	2,755,617	(37)
6.8194	39,938	4,843	(9,644,175)	(449)	2,749,550	(37)
6.8194	39,938	4,845	(9,639,330)	(449)	2,743,481	(37)
6.8194	39,938	4,847	(9,634,483)	(449)	2,737,409	(37)
6.8194	39,938	4,848	(9,629,635)	(448)	2,731,334	(37)
6.8194	39,938	4,850	(9,624,786)	(448)	2,725,257	(37)
6.8194	39,938	4,851	(9,619,934)	(448)	2,719,176	(37)
6.8194	39,938	4,853	(9,615,081)	(447)	2,713,093	(37)
6.8194	39,938	4,854	(9,610,227)	(447)	2,707,007	(37)
6.8194	39,938	4,856	(9,605,371)	(447)	2,700,918	(37)
6.8194	39,938	4,858	(9,600,513)	(446)	2,694,827	(37)
6.8194	39,938	4,859	(9,595,654)	(446)	2,688,732	(37)
6.8194	39,938	4,861	(9,590,793)	(445)	2,682,635	(37)
6.8194	39,938	4,862	(9,585,931)	(445)	2,676,535	(37)
6.8194	39,938	4,864	(9,581,067)	(445)	2,670,432	(37)
6.8194	39,938	4,866	(9,576,201)	(444)	2,664,327	(37)
6.8194	39,938	4,867	(9,571,334)	(444)	2,658,218	(37)
6.8194	39,938	4,869	(9,566,465)	(444)	2,652,107	(37)
6.8194	39,938	4,870	(9,561,595)	(443)	2,645,993	(37)
6.8194	39,938	4,872	(9,556,723)	(443)	2,639,876	(37)
6.8194	39,938	4,874	(9,551,849)	(442)	2,633,757	(37)
6.8194	39,938	4,875	(9,546,974)	(442)	2,627,635	(37)
6.8194	39,938	4,877	(9,542,097)	(442)	2,621,509	(37)
6.8194	39,938	4,878	(9,537,219)	(441)	2,615,381	(37)
6.8194	39,938	4,880	(9,532,339)	(441)	2,609,251	(37)
6.8194	39,938	4,882	(9,527,457)	(440)	2,603,117	(36)
6.8194	39,938	4,883	(9,522,574)	(440)	2,596,981	(36)
6.8194	39,938	4,885	(9,517,689)	(439)	2,590,841	(36)
6.8194	39,938	4,886	(9,512,803)	(439)	2,584,699	(36)
6.8194	39,938	4,888	(9,507,915)	(438)	2,578,555	(36)
6.8194	39,938	4,890	(9,503,025)	(438)	2,572,407	(36)
6.8194	39,938	4,891	(9,498,134)	(438)	2,566,256	(36)

6.8194	39,938	4,893	(9,493,242)	(437)	2,560,103	(36)
6.8194	39,938	4,894	(9,488,347)	(437)	2,553,947	(36)
6.8194	39,938	4,896	(9,483,451)	(436)	2,547,788	(36)
6.8194	39,938	4,898	(9,478,554)	(436)	2,541,627	(36)
6.8194	39,938	4,899	(9,473,655)	(435)	2,535,462	(36)
6.8194	39,938	4,901	(9,468,754)	(435)	2,529,295	(36)
6.8194	39,938	4,902	(9,463,852)	(434)	2,523,124	(36)
6.8194	39,938	4,904	(9,458,948)	(434)	2,516,951	(36)
6.8194	39,938	4,905	(9,454,042)	(433)	2,510,776	(36)
6.8194	39,938	4,907	(9,449,135)	(433)	2,504,597	(36)
6.8194	39,938	4,909	(9,444,227)	(432)	2,498,416	(36)
6.8194	39,938	4,910	(9,439,316)	(432)	2,492,231	(36)
6.8194	39,938	4,912	(9,434,405)	(431)	2,486,044	(36)
6.8194	39,938	4,913	(9,429,491)	(431)	2,479,854	(36)
6.8194	39,938	4,915	(9,424,576)	(430)	2,473,662	(36)
6.8194	39,938	4,917	(9,419,659)	(430)	2,467,466	(36)
6.8194	39,938	4,918	(9,414,741)	(429)	2,461,268	(36)
6.8194	39,938	4,920	(9,409,821)	(429)	2,455,066	(36)
6.8194	39,938	4,921	(9,404,900)	(428)	2,448,862	(36)
6.8194	39,938	4,923	(9,399,977)	(428)	2,442,655	(36)
6.8194	39,938	4,925	(9,395,052)	(427)	2,436,446	(36)
6.8194	39,938	4,926	(9,390,126)	(426)	2,430,233	(36)
6.8194	39,938	4,928	(9,385,198)	(426)	2,424,018	(36)
6.8194	39,938	4,929	(9,380,268)	(425)	2,417,800	(36)
6.8194	39,938	4,931	(9,375,337)	(425)	2,411,578	(36)
6.8194	39,938	4,933	(9,370,405)	(424)	2,405,355	(36)
6.8194	39,938	4,934	(9,365,470)	(424)	2,399,128	(35)
6.8194	39,938	4,936	(9,360,534)	(423)	2,392,898	(35)
6.8194	39,938	6,313	(16,583,064)	14,139	2,385,338	(28)
6.8194	41,406	2,385,338	(14,197,726)	14,359	5,205,224	(0)
6.8194	41,406	(2,624)	(14,200,350)	14,363	5,196,740	101
6.8194	41,406	(2,626)	(14,202,976)	14,366	5,188,252	101
6.8194	41,406	(2,627)	(14,205,603)	14,369	5,179,760	101
6.8194	41,406	(2,629)	(14,208,232)	14,372	5,171,264	101
6.8194	41,406	(2,630)	(14,210,862)	14,375	5,162,765	101
6.8194	41,406	(2,632)	(14,213,494)	14,378	5,154,262	101
6.8194	41,406	(2,633)	(14,216,127)	14,381	5,145,755	101
6.8194	41,406	(2,635)	(14,218,762)	14,384	5,137,244	101
6.8194	41,406	(2,636)	(14,221,398)	14,387	5,128,730	101
6.8194	41,406	(2,638)	(14,224,036)	14,390	5,120,212	101
6.8194	41,406	(2,639)	(14,226,675)	14,393	5,111,690	101
6.8194	41,406	(2,641)	(14,229,316)	14,396	5,103,164	101
6.8194	41,406	(2,642)	(14,231,958)	14,399	5,094,634	101
6.8194	41,406	(2,644)	(14,234,602)	14,402	5,086,101	101
6.8194	41,406	(2,645)	(14,237,247)	14,405	5,077,564	101
6.8194	41,406	(2,647)	(14,239,894)	14,408	5,069,023	101
6.8194	41,406	(2,648)	(14,242,542)	14,411	5,060,478	100
6.8194	41,406	(2,650)	(14,245,192)	14,415	5,051,930	100
6.8194	41,406	(2,651)	(14,247,843)	14,418	5,043,378	100
6.8194	41,406	(2,653)	(14,250,495)	14,421	5,034,822	100
6.8194	41,406	(2,654)	(14,253,150)	14,424	5,026,262	100
6.8194	41,406	(2,656)	(14,255,805)	14,427	5,017,698	100
6.8194	41,406	(2,657)	(14,258,462)	14,430	5,009,131	100
6.8194	41,406	(2,659)	(14,261,121)	14,433	5,000,560	100
6.8194	41,406	(2,660)	(14,263,781)	14,436	4,991,985	100
6.8194	41,406	(2,662)	(14,266,443)	14,439	4,983,406	100

6.8194	41,406	(2,663)	(14,269,106)	14,442	4,974,823	100
6.8194	41,406	(2,665)	(14,271,771)	14,445	4,966,237	100
6.8194	41,406	(2,666)	(14,274,437)	14,448	4,957,647	100
6.8194	41,406	(2,668)	(14,277,105)	14,451	4,949,053	100
6.8194	41,406	(2,669)	(14,279,774)	14,455	4,940,455	100
6.8194	41,406	(2,671)	(14,282,445)	14,458	4,931,854	100
6.8194	41,406	(2,672)	(14,285,117)	14,461	4,923,248	100
6.8194	41,406	(2,674)	(14,287,790)	14,464	4,914,639	100
6.8194	41,406	(2,675)	(14,290,466)	14,467	4,906,026	100
6.8194	41,406	(2,677)	(14,293,142)	14,470	4,897,409	100
6.8194	41,406	(2,678)	(14,295,821)	14,473	4,888,789	100
6.8194	41,406	(2,680)	(14,298,500)	14,476	4,880,164	100
6.8194	41,406	(2,681)	(14,301,182)	14,479	4,871,536	100
6.8194	41,406	(2,683)	(14,303,864)	14,482	4,862,904	100
6.8194	41,406	(2,684)	(14,306,549)	14,485	4,854,268	100
6.8194	41,406	(2,686)	(14,309,235)	14,489	4,845,629	100
6.8194	41,406	(2,687)	(14,311,922)	14,492	4,836,985	99
6.8194	41,406	(2,689)	(14,314,611)	14,495	4,828,338	99
6.8194	41,406	(2,690)	(14,317,301)	14,498	4,819,687	99
6.8194	41,406	(2,692)	(14,319,993)	14,501	4,811,032	99
6.8194	41,406	(2,693)	(14,322,686)	14,504	4,802,373	99
6.8194	41,406	(2,695)	(14,325,381)	14,507	4,793,711	99
6.8194	41,406	(2,696)	(14,328,078)	14,510	4,785,045	99
6.8194	41,406	(2,698)	(14,330,776)	14,513	4,776,374	99
6.8194	41,406	(2,699)	(14,333,475)	14,517	4,767,700	99
6.8194	41,406	(2,701)	(14,336,176)	14,520	4,759,023	99
6.8194	41,406	(2,703)	(14,338,879)	14,523	4,750,341	99
6.8194	41,406	(2,704)	(14,341,583)	14,526	4,741,656	99
6.8194	41,406	(2,706)	(14,344,288)	14,529	4,732,966	99
6.8194	41,406	(2,707)	(14,346,995)	14,532	4,724,273	99
6.8194	41,406	(2,709)	(14,349,704)	14,535	4,715,576	99
6.8194	41,406	(2,710)	(14,352,414)	14,538	4,706,875	99
6.8194	41,406	(2,712)	(14,355,126)	14,541	4,698,171	99
6.8194	41,406	(2,713)	(14,357,839)	14,545	4,689,462	99
6.8194	41,406	(2,715)	(14,360,554)	14,548	4,680,750	99
6.8194	41,406	(2,716)	(14,363,270)	14,551	4,672,034	99
6.8194	41,406	(2,718)	(14,365,988)	14,554	4,663,314	99
6.8194	41,406	(2,719)	(14,368,707)	14,557	4,654,590	99
6.8194	41,406	(2,721)	(14,371,428)	14,560	4,645,863	99
6.8194	41,406	(2,722)	(14,374,150)	14,563	4,637,131	99
6.8194	41,406	(2,724)	(14,376,874)	14,566	4,628,396	99
6.8194	41,406	(2,725)	(14,379,600)	14,570	4,619,657	99
6.8194	41,406	(2,727)	(14,382,326)	14,573	4,610,914	99
6.8194	41,406	(2,729)	(14,385,055)	14,576	4,602,167	98
6.8194	41,406	(2,730)	(14,387,785)	14,579	4,593,416	98
6.8194	41,406	(2,732)	(14,390,517)	14,582	4,584,661	98
6.8194	41,406	(2,733)	(14,393,250)	14,585	4,575,903	98
6.8194	41,406	(2,735)	(14,395,984)	14,588	4,567,141	98
6.8194	41,406	(2,736)	(14,398,721)	14,592	4,558,375	98
6.8194	41,406	(2,738)	(14,401,458)	14,595	4,549,605	98
6.8194	41,406	(2,739)	(14,404,198)	14,598	4,540,831	98
6.8194	41,406	(2,741)	(14,406,939)	14,601	4,532,053	98
6.8194	41,406	(2,742)	(14,409,681)	14,604	4,523,272	98
6.8194	41,406	(2,744)	(14,412,425)	14,607	4,514,486	98
6.8194	41,406	(2,745)	(14,415,170)	14,610	4,505,697	98
6.8194	41,406	(2,747)	(14,417,917)	14,614	4,496,904	98

6.8194	41,406	(2,749)	(14,420,666)	14,617	4,488,107	98
6.8194	41,406	(2,750)	(14,423,416)	14,620	4,479,306	98
6.8194	41,406	(2,752)	(14,426,168)	14,623	4,470,502	98
6.8194	41,406	(2,753)	(14,428,921)	14,626	4,461,693	98
6.8194	41,406	(2,755)	(14,431,676)	14,629	4,452,881	98
6.8194	41,406	(2,756)	(14,434,432)	14,632	4,444,064	98
6.8194	41,406	(2,758)	(14,437,190)	14,636	4,435,244	98
6.8194	41,406	(2,759)	(14,439,949)	14,639	4,426,420	98
6.8194	41,406	(2,761)	(14,442,710)	14,642	4,417,592	98
6.8194	41,406	(2,763)	(14,445,473)	14,645	4,408,760	98
6.8194	41,406	(2,764)	(14,448,237)	14,648	4,399,925	98
6.8194	41,406	(2,766)	(14,451,003)	14,651	4,391,085	98
6.8194	41,406	(2,767)	(14,453,770)	14,655	4,382,242	98
6.8194	41,406	(2,769)	(14,456,538)	14,658	4,373,394	98
6.8194	41,406	(2,770)	(14,459,309)	14,661	4,364,543	97
6.8194	41,406	(2,772)	(14,462,081)	14,664	4,355,688	97
6.8194	41,406	(2,773)	(14,464,854)	14,667	4,346,829	97
6.8194	41,406	(2,775)	(14,467,629)	14,670	4,337,967	97
6.8194	41,406	(2,777)	(14,470,406)	14,674	4,329,100	97
6.8194	41,406	(2,778)	(14,473,184)	14,677	4,320,229	97
6.8194	41,406	(2,780)	(14,475,963)	14,680	4,311,355	97
6.8194	41,406	(2,781)	(14,478,745)	14,683	4,302,477	97
6.8194	41,406	(2,783)	(14,481,527)	14,686	4,293,594	97
6.8194	41,406	(2,784)	(14,484,312)	14,689	4,284,708	97
6.8194	41,406	(2,786)	(14,487,098)	14,693	4,275,818	97
6.8194	41,406	(2,787)	(14,489,885)	14,696	4,266,924	97
6.8194	41,406	(2,789)	(14,492,674)	14,699	4,258,026	97
6.8194	41,406	(2,791)	(14,495,465)	14,702	4,249,125	97
6.8194	41,406	(2,792)	(14,498,257)	14,705	4,240,219	97
6.8194	41,406	(2,794)	(14,501,051)	14,709	4,231,310	97
6.8194	41,406	(2,795)	(14,503,846)	14,712	4,222,396	97
6.8194	41,406	(2,797)	(14,506,643)	14,715	4,213,479	97
6.8194	41,406	(2,798)	(14,509,442)	14,718	4,204,558	97
6.8194	41,406	(2,800)	(14,512,242)	14,721	4,195,633	97
6.8194	41,406	(2,802)	(14,515,043)	14,724	4,186,704	97
6.8194	41,406	(2,803)	(14,517,847)	14,728	4,177,771	97
6.8194	41,406	(2,805)	(14,520,651)	14,731	4,168,834	97
6.8194	41,406	(2,806)	(14,523,458)	14,734	4,159,893	97
6.8194	41,406	(2,808)	(14,526,266)	14,737	4,150,949	97
6.8194	41,406	(2,810)	(14,529,075)	14,740	4,142,000	97
6.8194	41,406	(2,811)	(14,531,886)	14,744	4,133,048	97
6.8194	41,406	(2,813)	(14,534,699)	14,747	4,124,091	97
6.8194	41,406	(2,814)	(14,537,513)	14,750	4,115,131	96
6.8194	41,406	(2,816)	(14,540,329)	14,753	4,106,167	96
6.8194	41,406	(2,817)	(14,543,146)	14,756	4,097,199	96
6.8194	41,406	(2,819)	(14,545,965)	14,760	4,088,227	96
6.8194	41,406	(2,821)	(14,548,786)	14,763	4,079,251	96
6.8194	41,406	(2,822)	(14,551,608)	14,766	4,070,271	96
6.8194	41,406	(2,824)	(14,554,432)	14,769	4,061,287	96
6.8194	41,406	(2,825)	(14,557,257)	14,773	4,052,300	96
6.8194	41,406	(2,827)	(14,560,084)	14,776	4,043,308	96
6.8194	41,406	(2,829)	(14,562,913)	14,779	4,034,313	96
6.8194	41,406	(2,830)	(14,565,743)	14,782	4,025,313	96
6.8194	41,406	(2,832)	(14,568,574)	14,785	4,016,310	96
6.8194	41,406	(2,833)	(14,571,408)	14,789	4,007,302	96
6.8194	41,406	(2,835)	(14,574,243)	14,792	3,998,291	96

6.8194	41,406	(2,836)	(14,577,079)	14,795	3,989,276	96
6.8194	41,406	(2,838)	(14,579,917)	14,798	3,980,257	96
6.8194	41,406	(2,840)	(14,582,757)	14,801	3,971,234	96
6.8194	41,406	(2,841)	(14,585,598)	14,805	3,962,207	96
6.8194	41,406	(2,843)	(14,588,441)	14,808	3,953,176	96
6.8194	41,406	(2,844)	(14,591,285)	14,811	3,944,141	96
6.8194	41,406	(2,846)	(14,594,131)	14,814	3,935,102	96
6.8194	41,406	(2,848)	(14,596,979)	14,818	3,926,060	96
6.8194	41,406	(2,849)	(14,599,828)	14,821	3,917,013	96
6.8194	41,406	(2,851)	(14,602,679)	14,824	3,907,962	96
6.8194	41,406	(2,852)	(14,605,531)	14,827	3,898,908	96
6.8194	41,406	(2,854)	(14,608,386)	14,831	3,889,849	96
6.8194	41,406	(2,856)	(14,611,241)	14,834	3,880,787	96
6.8194	41,406	(2,857)	(14,614,098)	14,837	3,871,721	96
6.8194	41,406	(2,859)	(14,616,957)	14,840	3,862,650	96
6.8194	41,406	(2,860)	(14,619,818)	14,843	3,853,576	95
6.8194	41,406	(2,862)	(14,622,680)	14,847	3,844,498	95
6.8194	41,406	(2,864)	(14,625,543)	14,850	3,835,416	95
6.8194	41,406	(2,865)	(14,628,409)	14,853	3,826,330	95
6.8194	41,406	(2,867)	(14,631,275)	14,856	3,817,240	95
6.8194	41,406	(2,868)	(14,634,144)	14,860	3,808,146	95
6.8194	41,406	(2,870)	(14,637,014)	14,863	3,799,048	95
6.8194	41,406	(2,872)	(14,639,886)	14,866	3,789,946	95
6.8194	41,406	(2,873)	(14,642,759)	14,869	3,780,840	95
6.8194	41,406	(2,875)	(14,645,634)	14,873	3,771,730	95
6.8194	41,406	(2,877)	(14,648,510)	14,876	3,762,616	95
6.8194	41,406	(2,878)	(14,651,389)	14,879	3,753,498	95
6.8194	41,406	(2,880)	(14,654,268)	14,882	3,744,377	95
6.8194	41,406	(2,881)	(14,657,150)	14,886	3,735,251	95
6.8194	41,406	(2,883)	(14,660,033)	14,889	3,726,121	95
6.8194	41,406	(2,885)	(14,662,917)	14,892	3,716,988	95
6.8194	41,406	(2,886)	(14,665,804)	14,895	3,707,850	95
6.8194	41,406	(2,888)	(14,668,691)	14,899	3,698,708	95
6.8194	41,406	(2,889)	(14,671,581)	14,902	3,689,563	95
6.8194	41,406	(2,891)	(14,674,472)	14,905	3,680,413	95
6.8194	41,406	(2,893)	(14,677,365)	14,908	3,671,260	95
6.8194	41,406	(2,894)	(14,680,259)	14,912	3,662,102	95
6.8194	41,406	(2,896)	(14,683,155)	14,915	3,652,941	95
6.8194	41,406	(2,898)	(14,686,052)	14,918	3,643,775	95
6.8194	41,406	(2,899)	(14,688,952)	14,921	3,634,606	95
6.8194	41,406	(2,901)	(14,691,852)	14,925	3,625,433	95
6.8194	41,406	(2,902)	(14,694,755)	14,928	3,616,255	95
6.8194	41,406	(2,904)	(14,697,659)	14,931	3,607,074	95
6.8194	41,406	(2,906)	(14,700,565)	14,935	3,597,889	95
6.8194	41,406	(4,261)	(22,323,500)	29,262	3,587,299	64
6.8194	41,406	3,587,299	(18,736,200)	29,094	6,347,731	(0)
6.8194	41,406	(13,503)	(18,749,703)	29,100	6,334,186	26
6.8194	41,406	(13,508)	(18,763,211)	29,106	6,320,636	26
6.8194	41,406	(13,514)	(18,776,726)	29,113	6,307,080	26
6.8194	41,406	(13,520)	(18,790,246)	29,119	6,293,519	26
6.8194	41,406	(13,526)	(18,803,772)	29,125	6,279,953	26
6.8194	41,406	(13,532)	(18,817,304)	29,131	6,266,382	26
6.8194	41,406	(13,538)	(18,830,842)	29,138	6,252,805	26
6.8194	41,406	(13,544)	(18,844,385)	29,144	6,239,223	26
6.8194	41,406	(13,550)	(18,857,935)	29,150	6,225,636	26
6.8194	41,406	(13,555)	(18,871,490)	29,156	6,212,044	26

6.8194	41,406	(13,561)	(18,885,052)	29,163	6,198,446	26
6.8194	41,406	(13,567)	(18,898,619)	29,169	6,184,843	26
6.8194	41,406	(13,573)	(18,912,192)	29,175	6,171,234	26
6.8194	41,406	(13,579)	(18,925,771)	29,181	6,157,621	26
6.8194	41,406	(13,585)	(18,939,356)	29,188	6,144,002	26
6.8194	41,406	(13,591)	(18,952,947)	29,194	6,130,378	26
6.8194	41,406	(13,597)	(18,966,544)	29,200	6,116,748	26
6.8194	41,406	(13,603)	(18,980,147)	29,206	6,103,113	26
6.8194	41,406	(13,609)	(18,993,755)	29,212	6,089,473	26
6.8194	41,406	(13,615)	(19,007,370)	29,219	6,075,828	26
6.8194	41,406	(13,620)	(19,020,990)	29,225	6,062,177	26
6.8194	41,406	(13,626)	(19,034,617)	29,231	6,048,521	26
6.8194	41,406	(13,632)	(19,048,249)	29,237	6,034,859	26
6.8194	41,406	(13,638)	(19,061,887)	29,243	6,021,193	26
6.8194	41,406	(13,644)	(19,075,531)	29,250	6,007,521	26
6.8194	41,406	(13,650)	(19,089,181)	29,256	5,993,844	26
6.8194	41,406	(13,656)	(19,102,837)	29,262	5,980,161	26
6.8194	41,406	(13,662)	(19,116,499)	29,268	5,966,473	26
6.8194	41,406	(13,668)	(19,130,167)	29,274	5,952,780	26
6.8194	41,406	(13,674)	(19,143,841)	29,280	5,939,081	26
6.8194	41,406	(13,680)	(19,157,520)	29,287	5,925,377	26
6.8194	41,406	(13,686)	(19,171,206)	29,293	5,911,668	26
6.8194	41,406	(13,692)	(19,184,898)	29,299	5,897,954	26
6.8194	41,406	(13,698)	(19,198,595)	29,305	5,884,234	26
6.8194	41,406	(13,703)	(19,212,299)	29,311	5,870,509	26
6.8194	41,406	(13,709)	(19,226,008)	29,317	5,856,778	26
6.8194	41,406	(13,715)	(19,239,723)	29,324	5,843,043	26
6.8194	41,406	(13,721)	(19,253,445)	29,330	5,829,301	26
6.8194	41,406	(13,727)	(19,267,172)	29,336	5,815,555	26
6.8194	41,406	(13,733)	(19,280,905)	29,342	5,801,803	26
6.8194	41,406	(13,739)	(19,294,644)	29,348	5,788,046	26
6.8194	41,406	(13,745)	(19,308,389)	29,354	5,774,284	26
6.8194	41,406	(13,751)	(19,322,141)	29,360	5,760,516	26
6.8194	41,406	(13,757)	(19,335,898)	29,366	5,746,743	26
6.8194	41,406	(13,763)	(19,349,661)	29,373	5,732,964	26
6.8194	41,406	(13,769)	(19,363,430)	29,379	5,719,181	26
6.8194	41,406	(13,775)	(19,377,205)	29,385	5,705,391	26
6.8194	41,406	(13,781)	(19,390,985)	29,391	5,691,597	26
6.8194	41,406	(13,787)	(19,404,772)	29,397	5,677,797	26
6.8194	41,406	(13,793)	(19,418,565)	29,403	5,663,992	26
6.8194	41,406	(13,799)	(19,432,364)	29,409	5,650,181	26
6.8194	41,406	(13,805)	(19,446,169)	29,415	5,636,366	26
6.8194	41,406	(13,811)	(19,459,980)	29,421	5,622,544	26
6.8194	41,406	(13,817)	(19,473,797)	29,427	5,608,718	26
6.8194	41,406	(13,823)	(19,487,619)	29,434	5,594,886	26
6.8194	41,406	(13,829)	(19,501,448)	29,440	5,581,049	26
6.8194	41,406	(13,835)	(19,515,283)	29,446	5,567,206	26
6.8194	41,406	(13,841)	(19,529,124)	29,452	5,553,358	26
6.8194	41,406	(13,847)	(19,542,970)	29,458	5,539,505	26
6.8194	41,406	(13,853)	(19,556,823)	29,464	5,525,646	26
6.8194	41,406	(13,859)	(19,570,682)	29,470	5,511,782	26
6.8194	41,406	(13,865)	(19,584,547)	29,476	5,497,913	26
6.8194	41,406	(13,871)	(19,598,418)	29,482	5,484,038	26
6.8194	41,406	(13,877)	(19,612,294)	29,488	5,470,158	26
6.8194	41,406	(13,883)	(19,626,177)	29,494	5,456,272	26
6.8194	41,406	(13,889)	(19,640,066)	29,500	5,442,381	26

6.8194	41,406	(13,895)	(19,653,961)	29,506	5,428,485	26
6.8194	41,406	(13,901)	(19,667,862)	29,512	5,414,583	26
6.8194	41,406	(13,907)	(19,681,768)	29,518	5,400,676	26
6.8194	41,406	(13,913)	(19,695,681)	29,524	5,386,764	26
6.8194	41,406	(13,919)	(19,709,600)	29,530	5,372,846	26
6.8194	41,406	(13,925)	(19,723,525)	29,536	5,358,923	26
6.8194	41,406	(13,931)	(19,737,456)	29,542	5,344,995	26
6.8194	41,406	(13,937)	(19,751,393)	29,548	5,331,061	26
6.8194	41,406	(13,943)	(19,765,336)	29,554	5,317,121	26
6.8194	41,406	(13,949)	(19,779,285)	29,560	5,303,177	26
6.8194	41,406	(13,955)	(19,793,240)	29,566	5,289,227	26
6.8194	41,406	(13,961)	(19,807,201)	29,572	5,275,271	26
6.8194	41,406	(13,967)	(19,821,168)	29,578	5,261,310	26
6.8194	41,406	(13,973)	(19,835,141)	29,584	5,247,344	27
6.8194	41,406	(13,979)	(19,849,121)	29,590	5,233,373	27
6.8194	41,406	(13,985)	(19,863,106)	29,596	5,219,396	27
6.8194	41,406	(13,991)	(19,877,097)	29,602	5,205,413	27
6.8194	41,406	(13,997)	(19,891,095)	29,608	5,191,425	27
6.8194	41,406	(14,003)	(19,905,098)	29,614	5,177,432	27
6.8194	41,406	(14,009)	(19,919,107)	29,620	5,163,434	27
6.8194	41,406	(14,016)	(19,933,123)	29,626	5,149,430	27
6.8194	41,406	(14,022)	(19,947,145)	29,632	5,135,420	27
6.8194	41,406	(14,028)	(19,961,172)	29,638	5,121,405	27
6.8194	41,406	(14,034)	(19,975,206)	29,644	5,107,385	27
6.8194	41,406	(14,040)	(19,989,246)	29,650	5,093,360	27
6.8194	41,406	(14,046)	(20,003,292)	29,656	5,079,329	27
6.8194	41,406	(14,052)	(20,017,343)	29,662	5,065,292	27
6.8194	41,406	(14,058)	(20,031,401)	29,668	5,051,250	27
6.8194	41,406	(14,064)	(20,045,465)	29,674	5,037,203	27
6.8194	41,406	(14,070)	(20,059,536)	29,680	5,023,150	27
6.8194	41,406	(14,076)	(20,073,612)	29,686	5,009,092	27
6.8194	41,406	(14,082)	(20,087,694)	29,692	4,995,029	27
6.8194	41,406	(14,088)	(20,101,783)	29,698	4,980,960	27
6.8194	41,406	(14,094)	(20,115,877)	29,704	4,966,886	27
6.8194	41,406	(14,101)	(20,129,978)	29,709	4,952,806	27
6.8194	41,406	(14,107)	(20,144,084)	29,715	4,938,721	27
6.8194	41,406	(14,113)	(20,158,197)	29,721	4,924,630	27
6.8194	41,406	(14,119)	(20,172,316)	29,727	4,910,534	27
6.8194	41,406	(14,125)	(20,186,441)	29,733	4,896,433	27
6.8194	41,406	(14,131)	(20,200,572)	29,739	4,882,326	27
6.8194	41,406	(14,137)	(20,214,709)	29,745	4,868,213	27
6.8194	41,406	(14,143)	(20,228,852)	29,751	4,854,096	27
6.8194	41,406	(14,149)	(20,243,001)	29,757	4,839,972	27
6.8194	41,406	(14,155)	(20,257,157)	29,763	4,825,844	27
6.8194	41,406	(14,162)	(20,271,318)	29,768	4,811,710	27
6.8194	41,406	(14,168)	(20,285,486)	29,774	4,797,570	27
6.8194	41,406	(14,174)	(20,299,660)	29,780	4,783,425	27
6.8194	41,406	(14,180)	(20,313,840)	29,786	4,769,275	27
6.8194	41,406	(14,186)	(20,328,026)	29,792	4,755,119	27
6.8194	41,406	(14,192)	(20,342,218)	29,798	4,740,958	27
6.8194	41,406	(14,198)	(20,356,416)	29,804	4,726,791	27
6.8194	41,406	(14,204)	(20,370,620)	29,810	4,712,619	27
6.8194	41,406	(14,210)	(20,384,831)	29,815	4,698,442	27
6.8194	41,406	(14,217)	(20,399,047)	29,821	4,684,258	27
6.8194	41,406	(14,223)	(20,413,270)	29,827	4,670,070	27
6.8194	41,406	(14,229)	(20,427,499)	29,833	4,655,876	27

6.8194	41,406	(14,235)	(20,441,734)	29,839	4,641,677	27
6.8194	41,406	(14,241)	(20,455,975)	29,845	4,627,472	27
6.8194	41,406	(14,247)	(20,470,223)	29,850	4,613,261	27
6.8194	41,406	(14,253)	(20,484,476)	29,856	4,599,046	27
6.8194	41,406	(14,260)	(20,498,736)	29,862	4,584,824	27
6.8194	41,406	(14,266)	(20,513,001)	29,868	4,570,598	27
6.8194	41,406	(14,272)	(20,527,273)	29,874	4,556,366	27
6.8194	41,406	(14,278)	(20,541,551)	29,879	4,542,128	27
6.8194	41,406	(14,284)	(20,555,835)	29,885	4,527,885	27
6.8194	41,406	(14,290)	(20,570,126)	29,891	4,513,636	27
6.8194	41,406	(14,296)	(20,584,422)	29,897	4,499,382	27
6.8194	41,406	(14,303)	(20,598,725)	29,903	4,485,123	27
6.8194	41,406	(14,309)	(20,613,034)	29,908	4,470,858	27
6.8194	41,406	(14,315)	(20,627,349)	29,914	4,456,587	27
6.8194	41,406	(14,321)	(20,641,670)	29,920	4,442,311	27
6.8194	41,406	(14,327)	(20,655,997)	29,926	4,428,030	27
6.8194	41,406	(14,333)	(20,670,331)	29,932	4,413,743	27
6.8194	41,406	(14,340)	(20,684,670)	29,937	4,399,451	27
6.8194	41,406	(14,346)	(20,699,016)	29,943	4,385,153	27
6.8194	41,406	(14,352)	(20,713,368)	29,949	4,370,849	27
6.8194	41,406	(14,358)	(20,727,726)	29,955	4,356,541	27
6.8194	41,406	(14,364)	(20,742,091)	29,960	4,342,226	27
6.8194	41,406	(14,371)	(20,756,461)	29,966	4,327,907	27
6.8194	41,406	(14,377)	(20,770,838)	29,972	4,313,581	27
6.8194	41,406	(14,383)	(20,785,221)	29,978	4,299,250	27
6.8194	41,406	(14,389)	(20,799,610)	29,983	4,284,914	27
6.8194	41,406	(14,395)	(20,814,005)	29,989	4,270,572	27
6.8194	41,406	(14,402)	(20,828,407)	29,995	4,256,225	27
6.8194	41,406	(14,408)	(20,842,815)	30,001	4,241,872	27
6.8194	41,406	(14,414)	(20,857,229)	30,006	4,227,514	27
6.8194	41,406	(14,420)	(20,871,649)	30,012	4,213,150	27
6.8194	41,406	(14,426)	(20,886,075)	30,018	4,198,781	27
6.8194	41,406	(14,433)	(20,900,508)	30,023	4,184,406	27
6.8194	41,406	(14,439)	(20,914,946)	30,029	4,170,026	27
6.8194	41,406	(14,445)	(20,929,391)	30,035	4,155,640	27
6.8194	41,406	(14,451)	(20,943,842)	30,041	4,141,249	27
6.8194	41,406	(14,457)	(20,958,300)	30,046	4,126,852	27
6.8194	41,406	(14,464)	(20,972,763)	30,052	4,112,450	27
6.8194	41,406	(14,470)	(20,987,233)	30,058	4,098,042	27
6.8194	41,406	(14,476)	(21,001,709)	30,063	4,083,629	27
6.8194	41,406	(14,482)	(21,016,192)	30,069	4,069,210	27
6.8194	41,406	(14,488)	(21,030,680)	30,075	4,054,786	27
6.8194	41,406	(14,495)	(21,045,175)	30,080	4,040,356	27
6.8194	41,406	(14,501)	(21,059,676)	30,086	4,025,920	27
6.8194	41,406	(14,507)	(21,074,183)	30,092	4,011,479	27
6.8194	41,406	(14,513)	(21,088,696)	30,097	3,997,033	27
6.8194	41,406	(14,520)	(21,103,216)	30,103	3,982,581	27
6.8194	41,406	(14,526)	(21,117,742)	30,109	3,968,124	27
6.8194	41,406	(14,532)	(21,132,274)	30,114	3,953,661	27
6.8194	41,406	(14,538)	(21,146,812)	30,120	3,939,192	27
6.8194	41,406	(14,545)	(21,161,357)	30,126	3,924,718	27
6.8194	41,406	(14,551)	(21,175,908)	30,131	3,910,238	27
6.8194	41,406	(14,557)	(21,190,465)	30,137	3,895,753	27
6.8194	41,406	(14,563)	(21,205,028)	30,142	3,881,262	27
6.8194	41,406	(14,570)	(21,219,598)	30,148	3,866,766	27
6.8194	41,406	(14,576)	(21,234,174)	30,154	3,852,265	27

6.8194	41,406	(14,582)	(21,248,756)	30,159	3,837,757	27
6.8194	41,406	(13,213)	(28,756,425)	44,727	3,821,868	30
6.8194	41,406	3,821,868	(24,934,558)	44,580	(6,435,147)	(0)
6.8194	41,406	(30,490)	(24,965,048)	44,589	(6,429,603)	15
6.8194	41,406	(30,502)	(24,995,550)	44,598	(6,424,055)	15
6.8194	41,406	(30,514)	(25,026,064)	44,607	(6,418,505)	15
6.8194	41,406	(30,526)	(25,056,590)	44,616	(6,412,952)	15
6.8194	41,406	(30,538)	(25,087,129)	44,625	(6,407,396)	15
6.8194	41,406	(30,550)	(25,117,679)	44,634	(6,401,837)	15
6.8194	41,406	(30,562)	(25,148,242)	44,643	(6,396,275)	15
6.8194	41,406	(30,575)	(25,178,816)	44,652	(6,390,710)	15
6.8194	41,406	(30,587)	(25,209,403)	44,661	(6,385,142)	15
6.8194	41,406	(30,599)	(25,240,002)	44,670	(6,379,571)	15
6.8194	41,406	(30,611)	(25,270,612)	44,679	(6,373,997)	15
6.8194	41,406	(30,623)	(25,301,235)	44,688	(6,368,419)	15
6.8194	41,406	(30,635)	(25,331,870)	44,697	(6,362,839)	15
6.8194	41,406	(30,647)	(25,362,518)	44,706	(6,357,256)	15
6.8194	41,406	(30,659)	(25,393,177)	44,715	(6,351,670)	15
6.8194	41,406	(30,671)	(25,423,848)	44,724	(6,346,080)	15
6.8194	41,406	(30,684)	(25,454,532)	44,733	(6,340,488)	15
6.8194	41,406	(30,696)	(25,485,228)	44,741	(6,334,893)	15
6.8194	41,406	(30,708)	(25,515,935)	44,750	(6,329,295)	16
6.8194	41,406	(30,720)	(25,546,655)	44,759	(6,323,693)	16
6.8194	41,406	(30,732)	(25,577,387)	44,768	(6,318,089)	16
6.8194	41,406	(30,744)	(25,608,132)	44,777	(6,312,481)	16
6.8194	41,406	(30,756)	(25,638,888)	44,786	(6,306,871)	16
6.8194	41,406	(30,769)	(25,669,657)	44,794	(6,301,257)	16
6.8194	41,406	(30,781)	(25,700,437)	44,803	(6,295,641)	16
6.8194	41,406	(30,793)	(25,731,230)	44,812	(6,290,021)	16
6.8194	41,406	(30,805)	(25,762,035)	44,821	(6,284,399)	16
6.8194	41,406	(30,817)	(25,792,852)	44,830	(6,278,773)	16
6.8194	41,406	(30,829)	(25,823,681)	44,838	(6,273,144)	16
6.8194	41,406	(30,841)	(25,854,523)	44,847	(6,267,513)	16
6.8194	41,406	(30,854)	(25,885,377)	44,856	(6,261,878)	16
6.8194	41,406	(30,866)	(25,916,242)	44,865	(6,256,240)	16
6.8194	41,406	(30,878)	(25,947,120)	44,873	(6,250,599)	16
6.8194	41,406	(30,890)	(25,978,011)	44,882	(6,244,955)	16
6.8194	41,406	(30,902)	(26,008,913)	44,891	(6,239,308)	16
6.8194	41,406	(30,915)	(26,039,828)	44,899	(6,233,659)	16
6.8194	41,406	(30,927)	(26,070,754)	44,908	(6,228,005)	16
6.8194	41,406	(30,939)	(26,101,693)	44,917	(6,222,349)	16
6.8194	41,406	(30,951)	(26,132,645)	44,925	(6,216,690)	16
6.8194	41,406	(30,963)	(26,163,608)	44,934	(6,211,028)	16
6.8194	41,406	(30,976)	(26,194,584)	44,943	(6,205,363)	16
6.8194	41,406	(30,988)	(26,225,572)	44,951	(6,199,695)	16
6.8194	41,406	(31,000)	(26,256,572)	44,960	(6,194,023)	16
6.8194	41,406	(31,012)	(26,287,584)	44,968	(6,188,349)	16
6.8194	41,406	(31,025)	(26,318,608)	44,977	(6,182,671)	16
6.8194	41,406	(31,037)	(26,349,645)	44,985	(6,176,991)	16
6.8194	41,406	(31,049)	(26,380,694)	44,994	(6,171,307)	16
6.8194	41,406	(31,061)	(26,411,755)	45,003	(6,165,621)	16
6.8194	41,406	(31,073)	(26,442,829)	45,011	(6,159,931)	16
6.8194	41,406	(31,086)	(26,473,915)	45,020	(6,154,238)	16
6.8194	41,406	(31,098)	(26,505,013)	45,028	(6,148,543)	16
6.8194	41,406	(31,110)	(26,536,123)	45,037	(6,142,844)	16
6.8194	41,406	(31,123)	(26,567,245)	45,045	(6,137,142)	16

6.8194	41,406	(31,135)	(26,598,380)	45,053	(6,131,437)	16
6.8194	41,406	(31,147)	(26,629,527)	45,062	(6,125,729)	16
6.8194	41,406	(31,159)	(26,660,687)	45,070	(6,120,018)	16
6.8194	41,406	(31,172)	(26,691,858)	45,079	(6,114,303)	16
6.8194	41,406	(31,184)	(26,723,042)	45,087	(6,108,586)	16
6.8194	41,406	(31,196)	(26,754,238)	45,096	(6,102,866)	16
6.8194	41,406	(31,208)	(26,785,447)	45,104	(6,097,142)	16
6.8194	41,406	(31,221)	(26,816,667)	45,112	(6,091,416)	16
6.8194	41,406	(31,233)	(26,847,900)	45,121	(6,085,686)	16
6.8194	41,406	(31,245)	(26,879,146)	45,129	(6,079,954)	16
6.8194	41,406	(31,258)	(26,910,403)	45,137	(6,074,218)	16
6.8194	41,406	(31,270)	(26,941,673)	45,146	(6,068,479)	16
6.8194	41,406	(31,282)	(26,972,956)	45,154	(6,062,737)	16
6.8194	41,406	(31,295)	(27,004,250)	45,162	(6,056,992)	16
6.8194	41,406	(31,307)	(27,035,557)	45,171	(6,051,244)	16
6.8194	41,406	(31,319)	(27,066,876)	45,179	(6,045,493)	16
6.8194	41,406	(31,332)	(27,098,208)	45,187	(6,039,739)	16
6.8194	41,406	(31,344)	(27,129,552)	45,196	(6,033,981)	16
6.8194	41,406	(31,356)	(27,160,908)	45,204	(6,028,221)	16
6.8194	41,406	(31,369)	(27,192,276)	45,212	(6,022,458)	16
6.8194	41,406	(31,381)	(27,223,657)	45,220	(6,016,691)	16
6.8194	41,406	(31,393)	(27,255,051)	45,228	(6,010,921)	16
6.8194	41,406	(31,406)	(27,286,456)	45,237	(6,005,149)	16
6.8194	41,406	(31,418)	(27,317,874)	45,245	(5,999,373)	16
6.8194	41,406	(31,430)	(27,349,304)	45,253	(5,993,594)	16
6.8194	41,406	(31,443)	(27,380,747)	45,261	(5,987,812)	16
6.8194	41,406	(31,455)	(27,412,202)	45,269	(5,982,027)	16
6.8194	41,406	(31,467)	(27,443,670)	45,278	(5,976,238)	16
6.8194	41,406	(31,480)	(27,475,149)	45,286	(5,970,447)	16
6.8194	41,406	(31,492)	(27,506,642)	45,294	(5,964,653)	16
6.8194	41,406	(31,505)	(27,538,146)	45,302	(5,958,855)	16
6.8194	41,406	(31,517)	(27,569,663)	45,310	(5,953,054)	16
6.8194	41,406	(31,529)	(27,601,192)	45,318	(5,947,251)	16
6.8194	41,406	(31,542)	(27,632,734)	45,326	(5,941,444)	16
6.8194	41,406	(31,554)	(27,664,288)	45,334	(5,935,634)	16
6.8194	41,406	(31,567)	(27,695,855)	45,342	(5,929,821)	16
6.8194	41,406	(31,579)	(27,727,434)	45,350	(5,924,005)	16
6.8194	41,406	(31,591)	(27,759,025)	45,358	(5,918,185)	16
6.8194	41,406	(31,604)	(27,790,629)	45,366	(5,912,363)	16
6.8194	41,406	(31,616)	(27,822,245)	45,374	(5,906,538)	16
6.8194	41,406	(31,629)	(27,853,873)	45,382	(5,900,709)	16
6.8194	41,406	(31,641)	(27,885,514)	45,390	(5,894,877)	16
6.8194	41,406	(31,653)	(27,917,168)	45,398	(5,889,042)	16
6.8194	41,406	(31,666)	(27,948,834)	45,406	(5,883,204)	16
6.8194	41,406	(31,678)	(27,980,512)	45,414	(5,877,363)	16
6.8194	41,406	(31,691)	(28,012,203)	45,422	(5,871,519)	16
6.8194	41,406	(31,703)	(28,043,906)	45,430	(5,865,672)	17
6.8194	41,406	(31,716)	(28,075,622)	45,438	(5,859,821)	17
6.8194	41,406	(31,728)	(28,107,350)	45,446	(5,853,968)	17
6.8194	41,406	(31,741)	(28,139,090)	45,454	(5,848,111)	17
6.8194	41,406	(31,753)	(28,170,843)	45,461	(5,842,251)	17
6.8194	41,406	(31,765)	(28,202,609)	45,469	(5,836,389)	17
6.8194	41,406	(31,778)	(28,234,387)	45,477	(5,830,522)	17
6.8194	41,406	(31,790)	(28,266,177)	45,485	(5,824,653)	17
6.8194	41,406	(31,803)	(28,297,980)	45,493	(5,818,781)	17
6.8194	41,406	(31,815)	(28,329,795)	45,501	(5,812,906)	17

6.8194	41,406	(31,828)	(28,361,623)	45,508	(5,807,027)	17
6.8194	41,406	(31,840)	(28,393,463)	45,516	(5,801,145)	17
6.8194	41,406	(31,853)	(28,425,316)	45,524	(5,795,260)	17
6.8194	41,406	(31,865)	(28,457,182)	45,532	(5,789,372)	17
6.8194	41,406	(31,878)	(28,489,059)	45,539	(5,783,481)	17
6.8194	41,406	(31,890)	(28,520,950)	45,547	(5,777,587)	17
6.8194	41,406	(31,903)	(28,552,853)	45,555	(5,771,690)	17
6.8194	41,406	(31,915)	(28,584,768)	45,563	(5,765,789)	17
6.8194	41,406	(31,928)	(28,616,696)	45,570	(5,759,886)	17
6.8194	41,406	(31,940)	(28,648,636)	45,578	(5,753,979)	17
6.8194	41,406	(31,953)	(28,680,589)	45,586	(5,748,069)	17
6.8194	41,406	(31,965)	(28,712,555)	45,593	(5,742,156)	17
6.8194	41,406	(31,978)	(28,744,533)	45,601	(5,736,240)	17
6.8194	41,406	(31,991)	(28,776,523)	45,609	(5,730,320)	17
6.8194	41,406	(32,003)	(28,808,526)	45,616	(5,724,398)	17
6.8194	41,406	(32,016)	(28,840,542)	45,624	(5,718,472)	17
6.8194	41,406	(32,028)	(28,872,570)	45,631	(5,712,543)	17
6.8194	41,406	(32,041)	(28,904,611)	45,639	(5,706,611)	17
6.8194	41,406	(32,053)	(28,936,664)	45,647	(5,700,676)	17
6.8194	41,406	(32,066)	(28,968,730)	45,654	(5,694,738)	17
6.8194	41,406	(32,078)	(29,000,808)	45,662	(5,688,796)	17
6.8194	41,406	(32,091)	(29,032,899)	45,669	(5,682,852)	17
6.8194	41,406	(32,104)	(29,065,003)	45,677	(5,676,904)	17
6.8194	41,406	(32,116)	(29,097,119)	45,684	(5,670,953)	17
6.8194	41,406	(32,129)	(29,129,247)	45,692	(5,664,999)	17
6.8194	41,406	(32,141)	(29,161,389)	45,699	(5,659,042)	17
6.8194	41,406	(32,154)	(29,193,542)	45,707	(5,653,081)	17
6.8194	41,406	(32,166)	(29,225,709)	45,714	(5,647,118)	17
6.8194	41,406	(32,179)	(29,257,888)	45,722	(5,641,151)	17
6.8194	41,406	(32,192)	(29,290,080)	45,729	(5,635,181)	17
6.8194	41,406	(32,204)	(29,322,284)	45,736	(5,629,208)	17
6.8194	41,406	(32,217)	(29,354,501)	45,744	(5,623,232)	17
6.8194	41,406	(32,229)	(29,386,730)	45,751	(5,617,253)	17
6.8194	41,406	(32,242)	(29,418,972)	45,759	(5,611,270)	17
6.8194	41,406	(32,255)	(29,451,227)	45,766	(5,605,284)	17
6.8194	41,406	(32,267)	(29,483,494)	45,773	(5,599,295)	17
6.8194	41,406	(32,280)	(29,515,774)	45,781	(5,593,303)	17
6.8194	41,406	(32,293)	(29,548,067)	45,788	(5,587,308)	17
6.8194	41,406	(32,305)	(29,580,372)	45,795	(5,581,310)	17
6.8194	41,406	(32,318)	(29,612,690)	45,803	(5,575,308)	17
6.8194	41,406	(32,330)	(29,645,020)	45,810	(5,569,303)	17
6.8194	41,406	(32,343)	(29,677,363)	45,817	(5,563,295)	17
6.8194	41,406	(32,356)	(29,709,719)	45,825	(5,557,284)	17
6.8194	41,406	(32,368)	(29,742,088)	45,832	(5,551,270)	17
6.8194	41,406	(32,381)	(29,774,469)	45,839	(5,545,252)	17
6.8194	41,406	(32,394)	(29,806,862)	45,846	(5,539,232)	17
6.8194	41,406	(32,406)	(29,839,269)	45,853	(5,533,208)	17
6.8194	41,406	(32,419)	(29,871,688)	45,861	(5,527,181)	17
6.8194	41,406	(32,432)	(29,904,120)	45,868	(5,521,151)	17
6.8194	41,406	(32,444)	(29,936,564)	45,875	(5,515,117)	17
6.8194	41,406	(32,457)	(29,969,021)	45,882	(5,509,081)	17
6.8194	41,406	(32,470)	(30,001,491)	45,889	(5,503,041)	17
6.8194	41,406	(32,483)	(30,033,974)	45,897	(5,496,998)	17
6.8194	41,406	(32,495)	(30,066,469)	45,904	(5,490,952)	17
6.8194	41,406	(32,508)	(30,098,977)	45,911	(5,484,902)	17
6.8194	41,406	(32,521)	(30,131,497)	45,918	(5,478,850)	17

6.8194	41,406	(32,533)	(30,164,031)	45,925	(5,472,794)	17
6.8194	41,406	(32,546)	(30,196,577)	45,932	(5,466,735)	17
6.8194	41,406	(32,559)	(30,229,136)	45,939	(5,460,673)	17
6.8194	41,406	(32,571)	(30,261,707)	45,946	(5,454,607)	17
6.8194	41,406	(32,584)	(30,294,291)	45,953	(5,448,539)	17
6.8194	41,406	(32,597)	(30,326,888)	45,960	(5,442,467)	17
6.8194	41,406	(32,610)	(30,359,498)	45,967	(5,436,392)	17
6.8194	41,406	(32,622)	(30,392,120)	45,974	(5,430,314)	17
6.8194	41,406	(32,635)	(30,424,755)	45,981	(5,424,232)	17
6.8194	41,406	(32,648)	(30,457,403)	45,988	(5,418,148)	17
6.8194	41,406	(32,661)	(30,490,064)	45,995	(5,412,060)	17
6.8194	41,406	(32,673)	(30,522,737)	46,002	(5,405,969)	17
6.8194	41,406	(32,686)	(30,555,423)	46,009	(5,399,875)	17
6.8194	41,406	(32,699)	(30,588,122)	46,016	(5,393,777)	17
6.8194	41,406	(32,712)	(30,620,834)	46,023	(5,387,676)	17
6.8194	41,406	(32,724)	(30,653,558)	46,030	(5,381,573)	17
6.8194	41,406	(32,737)	(30,686,295)	46,037	(5,375,466)	17
6.8194	41,406	(34,262)	(38,339,232)	62,047	(5,370,755)	17
6.8194	45,031	(5,370,755)	(43,709,987)	63,337	(6,138,326)	0
6.8194	45,031	(28,050)	(43,738,037)	63,342	(6,131,786)	29
6.8194	45,031	(28,059)	(43,766,096)	63,347	(6,125,244)	29
6.8194	45,031	(28,069)	(43,794,165)	63,352	(6,118,698)	29
6.8194	45,031	(28,079)	(43,822,244)	63,357	(6,112,150)	29
6.8194	45,031	(28,089)	(43,850,333)	63,362	(6,105,597)	29
6.8194	45,031	(28,099)	(43,878,432)	63,367	(6,099,042)	29
6.8194	45,031	(28,109)	(43,906,540)	63,372	(6,092,483)	29
6.8194	45,031	(28,118)	(43,934,659)	63,377	(6,085,921)	29
6.8194	45,031	(28,128)	(43,962,787)	63,381	(6,079,356)	29
6.8194	45,031	(28,138)	(43,990,925)	63,386	(6,072,787)	29
6.8194	45,031	(28,148)	(44,019,073)	63,391	(6,066,216)	29
6.8194	45,031	(28,158)	(44,047,231)	63,396	(6,059,640)	29
6.8194	45,031	(28,168)	(44,075,398)	63,401	(6,053,062)	29
6.8194	45,031	(28,177)	(44,103,576)	63,405	(6,046,480)	29
6.8194	45,031	(28,187)	(44,131,763)	63,410	(6,039,895)	29
6.8194	45,031	(28,197)	(44,159,960)	63,415	(6,033,307)	29
6.8194	45,031	(28,207)	(44,188,167)	63,420	(6,026,715)	29
6.8194	45,031	(28,217)	(44,216,384)	63,424	(6,020,120)	29
6.8194	45,031	(28,227)	(44,244,611)	63,429	(6,013,522)	29
6.8194	45,031	(28,237)	(44,272,848)	63,434	(6,006,921)	29
6.8194	45,031	(28,247)	(44,301,094)	63,439	(6,000,316)	29
6.8194	45,031	(28,256)	(44,329,351)	63,443	(5,993,708)	29
6.8194	45,031	(28,266)	(44,357,617)	63,448	(5,987,097)	29
6.8194	45,031	(28,276)	(44,385,893)	63,453	(5,980,482)	29
6.8194	45,031	(28,286)	(44,414,179)	63,457	(5,973,864)	29
6.8194	45,031	(28,296)	(44,442,475)	63,462	(5,967,243)	29
6.8194	45,031	(28,306)	(44,470,781)	63,467	(5,960,618)	29
6.8194	45,031	(28,316)	(44,499,097)	63,471	(5,953,990)	29
6.8194	45,031	(28,326)	(44,527,423)	63,476	(5,947,359)	29
6.8194	45,031	(28,336)	(44,555,758)	63,480	(5,940,725)	29
6.8194	45,031	(28,345)	(44,584,104)	63,485	(5,934,087)	29
6.8194	45,031	(28,355)	(44,612,459)	63,490	(5,927,446)	29
6.8194	45,031	(28,365)	(44,640,824)	63,494	(5,920,802)	29
6.8194	45,031	(28,375)	(44,669,200)	63,499	(5,914,154)	29
6.8194	45,031	(28,385)	(44,697,585)	63,503	(5,907,503)	29
6.8194	45,031	(28,395)	(44,725,980)	63,508	(5,900,849)	29
6.8194	45,031	(28,405)	(44,754,385)	63,512	(5,894,191)	29

6.8194	45,031	(28,415)	(44,782,800)	63,517	(5,887,530)	29
6.8194	45,031	(28,425)	(44,811,225)	63,521	(5,880,866)	29
6.8194	45,031	(28,435)	(44,839,659)	63,526	(5,874,198)	29
6.8194	45,031	(28,445)	(44,868,104)	63,530	(5,867,527)	29
6.8194	45,031	(28,455)	(44,896,559)	63,535	(5,860,853)	29
6.8194	45,031	(28,465)	(44,925,023)	63,539	(5,854,176)	29
6.8194	45,031	(28,475)	(44,953,498)	63,544	(5,847,495)	29
6.8194	45,031	(28,484)	(44,981,982)	63,548	(5,840,811)	29
6.8194	45,031	(28,494)	(45,010,477)	63,553	(5,834,123)	29
6.8194	45,031	(28,504)	(45,038,981)	63,557	(5,827,432)	30
6.8194	45,031	(28,514)	(45,067,495)	63,562	(5,820,738)	30
6.8194	45,031	(28,524)	(45,096,020)	63,566	(5,814,041)	30
6.8194	45,031	(28,534)	(45,124,554)	63,570	(5,807,340)	30
6.8194	45,031	(28,544)	(45,153,098)	63,575	(5,800,636)	30
6.8194	45,031	(28,554)	(45,181,652)	63,579	(5,793,928)	30
6.8194	45,031	(28,564)	(45,210,216)	63,583	(5,787,217)	30
6.8194	45,031	(28,574)	(45,238,791)	63,588	(5,780,503)	30
6.8194	45,031	(28,584)	(45,267,375)	63,592	(5,773,786)	30
6.8194	45,031	(28,594)	(45,295,969)	63,596	(5,767,065)	30
6.8194	45,031	(28,604)	(45,324,573)	63,601	(5,760,341)	30
6.8194	45,031	(28,614)	(45,353,187)	63,605	(5,753,613)	30
6.8194	45,031	(28,624)	(45,381,811)	63,609	(5,746,883)	30
6.8194	45,031	(28,634)	(45,410,445)	63,614	(5,740,148)	30
6.8194	45,031	(28,644)	(45,439,089)	63,618	(5,733,411)	30
6.8194	45,031	(28,654)	(45,467,743)	63,622	(5,726,670)	30
6.8194	45,031	(28,664)	(45,496,407)	63,626	(5,719,926)	30
6.8194	45,031	(28,674)	(45,525,081)	63,631	(5,713,178)	30
6.8194	45,031	(28,684)	(45,553,765)	63,635	(5,706,427)	30
6.8194	45,031	(28,694)	(45,582,459)	63,639	(5,699,673)	30
6.8194	45,031	(28,704)	(45,611,163)	63,643	(5,692,916)	30
6.8194	45,031	(28,714)	(45,639,877)	63,648	(5,686,155)	30
6.8194	45,031	(28,724)	(45,668,601)	63,652	(5,679,390)	30
6.8194	45,031	(28,734)	(45,697,335)	63,656	(5,672,623)	30
6.8194	45,031	(28,744)	(45,726,079)	63,660	(5,665,852)	30
6.8194	45,031	(28,754)	(45,754,834)	63,664	(5,659,078)	30
6.8194	45,031	(28,764)	(45,783,598)	63,668	(5,652,300)	30
6.8194	45,031	(28,774)	(45,812,372)	63,672	(5,645,519)	30
6.8194	45,031	(28,784)	(45,841,156)	63,677	(5,638,734)	30
6.8194	45,031	(28,794)	(45,869,950)	63,681	(5,631,947)	30
6.8194	45,031	(28,804)	(45,898,755)	63,685	(5,625,156)	30
6.8194	45,031	(28,814)	(45,927,569)	63,689	(5,618,361)	30
6.8194	45,031	(28,824)	(45,956,394)	63,693	(5,611,563)	30
6.8194	45,031	(28,834)	(45,985,228)	63,697	(5,604,762)	30
6.8194	45,031	(28,845)	(46,014,073)	63,701	(5,597,957)	30
6.8194	45,031	(28,855)	(46,042,927)	63,705	(5,591,150)	30
6.8194	45,031	(28,865)	(46,071,792)	63,709	(5,584,338)	30
6.8194	45,031	(28,875)	(46,100,666)	63,713	(5,577,524)	30
6.8194	45,031	(28,885)	(46,129,551)	63,717	(5,570,706)	30
6.8194	45,031	(28,895)	(46,158,446)	63,721	(5,563,884)	30
6.8194	45,031	(28,905)	(46,187,351)	63,725	(5,557,059)	30
6.8194	45,031	(28,915)	(46,216,266)	63,729	(5,550,231)	30
6.8194	45,031	(28,925)	(46,245,191)	63,733	(5,543,400)	30
6.8194	45,031	(28,935)	(46,274,126)	63,737	(5,536,565)	30
6.8194	45,031	(28,945)	(46,303,071)	63,741	(5,529,727)	30
6.8194	45,031	(28,955)	(46,332,027)	63,745	(5,522,885)	30
6.8194	45,031	(28,965)	(46,360,992)	63,749	(5,516,040)	30

6.8194	45,031	(28,975)	(46,389,967)	63,753	(5,509,191)	30
6.8194	45,031	(28,986)	(46,418,953)	63,757	(5,502,340)	30
6.8194	45,031	(28,996)	(46,447,949)	63,760	(5,495,484)	30
6.8194	45,031	(29,006)	(46,476,954)	63,764	(5,488,626)	30
6.8194	45,031	(29,016)	(46,505,970)	63,768	(5,481,764)	30
6.8194	45,031	(29,026)	(46,534,996)	63,772	(5,474,899)	30
6.8194	45,031	(29,036)	(46,564,032)	63,776	(5,468,030)	30
6.8194	45,031	(29,046)	(46,593,078)	63,780	(5,461,158)	30
6.8194	45,031	(29,056)	(46,622,135)	63,783	(5,454,282)	30
6.8194	45,031	(29,066)	(46,651,201)	63,787	(5,447,403)	30
6.8194	45,031	(29,077)	(46,680,278)	63,791	(5,440,521)	30
6.8194	45,031	(29,087)	(46,709,364)	63,795	(5,433,636)	30
6.8194	45,031	(29,097)	(46,738,461)	63,799	(5,426,746)	30
6.8194	45,031	(29,107)	(46,767,568)	63,802	(5,419,854)	30
6.8194	45,031	(29,117)	(46,796,685)	63,806	(5,412,958)	30
6.8194	45,031	(29,127)	(46,825,812)	63,810	(5,406,059)	30
6.8194	45,031	(29,137)	(46,854,950)	63,814	(5,399,156)	30
6.8194	45,031	(29,147)	(46,884,097)	63,817	(5,392,250)	30
6.8194	45,031	(29,158)	(46,913,255)	63,821	(5,385,341)	30
6.8194	45,031	(29,168)	(46,942,423)	63,825	(5,378,428)	30
6.8194	45,031	(29,178)	(46,971,600)	63,828	(5,371,512)	30
6.8194	45,031	(29,188)	(47,000,788)	63,832	(5,364,592)	30
6.8194	45,031	(29,198)	(47,029,987)	63,836	(5,357,669)	30
6.8194	45,031	(29,208)	(47,059,195)	63,839	(5,350,742)	30
6.8194	45,031	(29,219)	(47,088,414)	63,843	(5,343,813)	30
6.8194	45,031	(29,229)	(47,117,642)	63,846	(5,336,879)	30
6.8194	45,031	(29,239)	(47,146,881)	63,850	(5,329,943)	30
6.8194	45,031	(29,249)	(47,176,130)	63,854	(5,323,002)	30
6.8194	45,031	(29,259)	(47,205,390)	63,857	(5,316,059)	30
6.8194	45,031	(29,269)	(47,234,659)	63,861	(5,309,112)	30
6.8194	45,031	(29,280)	(47,263,938)	63,864	(5,302,162)	30
6.8194	45,031	(29,290)	(47,293,228)	63,868	(5,295,208)	30
6.8194	45,031	(29,300)	(47,322,528)	63,871	(5,288,251)	30
6.8194	45,031	(29,310)	(47,351,838)	63,875	(5,281,290)	30
6.8194	45,031	(29,320)	(47,381,159)	63,879	(5,274,326)	30
6.8194	45,031	(29,331)	(47,410,489)	63,882	(5,267,359)	30
6.8194	45,031	(29,341)	(47,439,830)	63,886	(5,260,388)	30
6.8194	45,031	(29,351)	(47,469,181)	63,889	(5,253,414)	30
6.8194	45,031	(29,361)	(47,498,542)	63,892	(5,246,436)	30
6.8194	45,031	(29,371)	(47,527,913)	63,896	(5,239,455)	30
6.8194	45,031	(29,382)	(47,557,295)	63,899	(5,232,470)	30
6.8194	45,031	(29,392)	(47,586,687)	63,903	(5,225,482)	30
6.8194	45,031	(29,402)	(47,616,089)	63,906	(5,218,491)	30
6.8194	45,031	(29,412)	(47,645,501)	63,910	(5,211,496)	30
6.8194	45,031	(29,422)	(47,674,923)	63,913	(5,204,498)	30
6.8194	45,031	(29,433)	(47,704,356)	63,916	(5,197,496)	30
6.8194	45,031	(29,443)	(47,733,799)	63,920	(5,190,491)	30
6.8194	45,031	(29,453)	(47,763,252)	63,923	(5,183,482)	30
6.8194	45,031	(29,463)	(47,792,715)	63,926	(5,176,470)	30
6.8194	45,031	(29,474)	(47,822,189)	63,930	(5,169,455)	30
6.8194	45,031	(29,484)	(47,851,673)	63,933	(5,162,436)	30
6.8194	45,031	(29,494)	(47,881,167)	63,936	(5,155,413)	30
6.8194	45,031	(29,504)	(47,910,671)	63,940	(5,148,388)	30
6.8194	45,031	(29,515)	(47,940,186)	63,943	(5,141,358)	30
6.8194	45,031	(29,525)	(47,969,710)	63,946	(5,134,326)	30
6.8194	45,031	(29,535)	(47,999,246)	63,950	(5,127,289)	30

6.8194	45,031	(29,545)	(48,028,791)	63,953	(5,120,250)	30
6.8194	45,031	(29,556)	(48,058,346)	63,956	(5,113,207)	30
6.8194	45,031	(29,566)	(48,087,912)	63,959	(5,106,160)	30
6.8194	45,031	(29,576)	(48,117,488)	63,963	(5,099,111)	30
6.8194	45,031	(29,586)	(48,147,075)	63,966	(5,092,057)	30
6.8194	45,031	(29,597)	(48,176,671)	63,969	(5,085,000)	30
6.8194	45,031	(29,607)	(48,206,278)	63,972	(5,077,940)	30
6.8194	45,031	(29,617)	(48,235,896)	63,975	(5,070,876)	30
6.8194	45,031	(29,628)	(48,265,523)	63,979	(5,063,809)	30
6.8194	45,031	(29,638)	(48,295,161)	63,982	(5,056,739)	30
6.8194	45,031	(29,648)	(48,324,809)	63,985	(5,049,664)	30
6.8194	45,031	(29,658)	(48,354,467)	63,988	(5,042,587)	30
6.8194	45,031	(29,669)	(48,384,136)	63,991	(5,035,506)	30
6.8194	45,031	(29,679)	(48,413,815)	63,994	(5,028,421)	30
6.8194	45,031	(29,689)	(48,443,504)	63,997	(5,021,334)	30
6.8194	45,031	(29,700)	(48,473,204)	64,000	(5,014,242)	30
6.8194	45,031	(29,710)	(48,502,914)	64,003	(5,007,147)	30
6.8194	45,031	(29,720)	(48,532,634)	64,006	(5,000,049)	30
6.8194	45,031	(29,730)	(48,562,364)	64,010	(4,992,947)	30
6.8194	45,031	(29,741)	(48,592,105)	64,013	(4,985,842)	31
6.8194	45,031	(29,751)	(48,621,856)	64,016	(4,978,733)	31
6.8194	45,031	(29,761)	(48,651,618)	64,019	(4,971,621)	31
6.8194	45,031	(29,772)	(48,681,390)	64,022	(4,964,505)	31
6.8194	45,031	(29,782)	(48,711,172)	64,025	(4,957,386)	31
6.8194	45,031	(29,792)	(48,740,964)	64,028	(4,950,263)	31
6.8194	45,031	(29,803)	(48,770,767)	64,031	(4,943,137)	31
6.8194	45,031	(29,813)	(48,800,580)	64,033	(4,936,008)	31
6.8194	45,031	(29,823)	(48,830,403)	64,036	(4,928,875)	31
6.8194	45,031	(29,834)	(48,860,237)	64,039	(4,921,738)	31
6.8194	45,031	(29,844)	(48,890,081)	64,042	(4,914,598)	31
6.8194	45,031	(31,634)	(57,072,342)	45,213	(4,908,952)	29
6.8194	(129,303)	(4,908,952)	(61,981,294)	46,182	(7,105,226)	0
6.8194	(129,303)	(24,216)	(62,005,510)	46,177	(7,093,703)	48
6.8194	(129,303)	(24,223)	(62,029,734)	46,171	(7,082,176)	48
6.8194	(129,303)	(24,230)	(62,053,964)	46,166	(7,070,644)	48
6.8194	(129,303)	(24,237)	(62,078,201)	46,160	(7,059,107)	48
6.8194	(129,303)	(24,245)	(62,102,446)	46,155	(7,047,566)	48
6.8194	(129,303)	(24,252)	(62,126,698)	46,149	(7,036,019)	48
6.8194	(129,303)	(24,259)	(62,150,957)	46,144	(7,024,468)	48
6.8194	(129,303)	(24,266)	(62,175,223)	46,138	(7,012,912)	48
6.8194	(129,303)	(24,273)	(62,199,496)	46,132	(7,001,351)	48
6.8194	(129,303)	(24,280)	(62,223,776)	46,127	(6,989,785)	48
6.8194	(129,303)	(24,288)	(62,248,064)	46,121	(6,978,214)	48
6.8194	(129,303)	(24,295)	(62,272,358)	46,116	(6,966,639)	48
6.8194	(129,303)	(24,302)	(62,296,660)	46,110	(6,955,058)	48
6.8194	(129,303)	(24,309)	(62,320,969)	46,104	(6,943,473)	48
6.8194	(129,303)	(24,316)	(62,345,286)	46,099	(6,931,883)	48
6.8194	(129,303)	(24,323)	(62,369,609)	46,093	(6,920,289)	48
6.8194	(129,303)	(24,331)	(62,393,940)	46,088	(6,908,689)	48
6.8194	(129,303)	(24,338)	(62,418,277)	46,082	(6,897,085)	48
6.8194	(129,303)	(24,345)	(62,442,622)	46,076	(6,885,475)	48
6.8194	(129,303)	(24,352)	(62,466,974)	46,071	(6,873,861)	48
6.8194	(129,303)	(24,359)	(62,491,334)	46,065	(6,862,242)	48
6.8194	(129,303)	(24,366)	(62,515,700)	46,059	(6,850,618)	48
6.8194	(129,303)	(24,374)	(62,540,074)	46,054	(6,838,990)	48
6.8194	(129,303)	(24,381)	(62,564,455)	46,048	(6,827,356)	48

6.8194	(129,303)	(24,388)	(62,588,843)	46,042	(6,815,718)	48
6.8194	(129,303)	(24,395)	(62,613,238)	46,036	(6,804,075)	48
6.8194	(129,303)	(24,402)	(62,637,640)	46,031	(6,792,427)	48
6.8194	(129,303)	(24,410)	(62,662,050)	46,025	(6,780,774)	48
6.8194	(129,303)	(24,417)	(62,686,467)	46,019	(6,769,116)	48
6.8194	(129,303)	(24,424)	(62,710,891)	46,013	(6,757,453)	48
6.8194	(129,303)	(24,431)	(62,735,322)	46,007	(6,745,786)	48
6.8194	(129,303)	(24,438)	(62,759,760)	46,002	(6,734,114)	48
6.8194	(129,303)	(24,446)	(62,784,206)	45,996	(6,722,436)	48
6.8194	(129,303)	(24,453)	(62,808,659)	45,990	(6,710,754)	48
6.8194	(129,303)	(24,460)	(62,833,119)	45,984	(6,699,068)	48
6.8194	(129,303)	(24,467)	(62,857,586)	45,978	(6,687,376)	48
6.8194	(129,303)	(24,474)	(62,882,060)	45,973	(6,675,679)	48
6.8194	(129,303)	(24,482)	(62,906,542)	45,967	(6,663,978)	48
6.8194	(129,303)	(24,489)	(62,931,031)	45,961	(6,652,271)	48
6.8194	(129,303)	(24,496)	(62,955,527)	45,955	(6,640,560)	48
6.8194	(129,303)	(24,503)	(62,980,030)	45,949	(6,628,844)	48
6.8194	(129,303)	(24,511)	(63,004,541)	45,943	(6,617,123)	48
6.8194	(129,303)	(24,518)	(63,029,058)	45,937	(6,605,397)	48
6.8194	(129,303)	(24,525)	(63,053,583)	45,931	(6,593,666)	48
6.8194	(129,303)	(24,532)	(63,078,116)	45,925	(6,581,931)	48
6.8194	(129,303)	(24,539)	(63,102,655)	45,919	(6,570,190)	48
6.8194	(129,303)	(24,547)	(63,127,202)	45,913	(6,558,445)	48
6.8194	(129,303)	(24,554)	(63,151,756)	45,907	(6,546,695)	48
6.8194	(129,303)	(24,561)	(63,176,317)	45,901	(6,534,940)	48
6.8194	(129,303)	(24,568)	(63,200,885)	45,895	(6,523,180)	48
6.8194	(129,303)	(24,576)	(63,225,461)	45,889	(6,511,415)	48
6.8194	(129,303)	(24,583)	(63,250,044)	45,883	(6,499,645)	48
6.8194	(129,303)	(24,590)	(63,274,634)	45,877	(6,487,870)	48
6.8194	(129,303)	(24,597)	(63,299,231)	45,871	(6,476,091)	48
6.8194	(129,303)	(24,605)	(63,323,836)	45,865	(6,464,306)	48
6.8194	(129,303)	(24,612)	(63,348,447)	45,859	(6,452,517)	48
6.8194	(129,303)	(24,619)	(63,373,067)	45,853	(6,440,723)	48
6.8194	(129,303)	(24,626)	(63,397,693)	45,847	(6,428,924)	48
6.8194	(129,303)	(24,634)	(63,422,326)	45,841	(6,417,120)	48
6.8194	(129,303)	(24,641)	(63,446,967)	45,835	(6,405,311)	48
6.8194	(129,303)	(24,648)	(63,471,615)	45,829	(6,393,497)	48
6.8194	(129,303)	(24,655)	(63,496,271)	45,823	(6,381,678)	48
6.8194	(129,303)	(24,663)	(63,520,933)	45,817	(6,369,855)	48
6.8194	(129,303)	(24,670)	(63,545,603)	45,811	(6,358,026)	48
6.8194	(129,303)	(24,677)	(63,570,280)	45,804	(6,346,193)	48
6.8194	(129,303)	(24,684)	(63,594,965)	45,798	(6,334,354)	48
6.8194	(129,303)	(24,692)	(63,619,656)	45,792	(6,322,511)	48
6.8194	(129,303)	(24,699)	(63,644,355)	45,786	(6,310,663)	48
6.8194	(129,303)	(24,706)	(63,669,062)	45,780	(6,298,810)	48
6.8194	(129,303)	(24,714)	(63,693,775)	45,773	(6,286,952)	48
6.8194	(129,303)	(24,721)	(63,718,496)	45,767	(6,275,089)	48
6.8194	(129,303)	(24,728)	(63,743,224)	45,761	(6,263,221)	48
6.8194	(129,303)	(24,735)	(63,767,959)	45,755	(6,251,348)	48
6.8194	(129,303)	(24,743)	(63,792,702)	45,749	(6,239,471)	48
6.8194	(129,303)	(24,750)	(63,817,452)	45,742	(6,227,588)	48
6.8194	(129,303)	(24,757)	(63,842,209)	45,736	(6,215,701)	48
6.8194	(129,303)	(24,764)	(63,866,973)	45,730	(6,203,808)	48
6.8194	(129,303)	(24,772)	(63,891,745)	45,723	(6,191,911)	48
6.8194	(129,303)	(24,779)	(63,916,524)	45,717	(6,180,009)	48
6.8194	(129,303)	(24,786)	(63,941,311)	45,711	(6,168,102)	48

6.8194	(129,303)	(24,794)	(63,966,104)	45,705	(6,156,189)	48
6.8194	(129,303)	(24,801)	(63,990,905)	45,698	(6,144,272)	48
6.8194	(129,303)	(24,808)	(64,015,713)	45,692	(6,132,350)	48
6.8194	(129,303)	(24,816)	(64,040,529)	45,686	(6,120,423)	48
6.8194	(129,303)	(24,823)	(64,065,352)	45,679	(6,108,492)	48
6.8194	(129,303)	(24,830)	(64,090,182)	45,673	(6,096,555)	48
6.8194	(129,303)	(24,837)	(64,115,020)	45,666	(6,084,613)	48
6.8194	(129,303)	(24,845)	(64,139,864)	45,660	(6,072,666)	48
6.8194	(129,303)	(24,852)	(64,164,716)	45,654	(6,060,715)	48
6.8194	(129,303)	(24,859)	(64,189,576)	45,647	(6,048,758)	48
6.8194	(129,303)	(24,867)	(64,214,442)	45,641	(6,036,797)	48
6.8194	(129,303)	(24,874)	(64,239,317)	45,634	(6,024,830)	48
6.8194	(129,303)	(24,881)	(64,264,198)	45,628	(6,012,859)	48
6.8194	(129,303)	(24,889)	(64,289,087)	45,621	(6,000,883)	48
6.8194	(129,303)	(24,896)	(64,313,983)	45,615	(5,988,901)	48
6.8194	(129,303)	(24,903)	(64,338,886)	45,609	(5,976,915)	48
6.8194	(129,303)	(24,911)	(64,363,796)	45,602	(5,964,924)	48
6.8194	(129,303)	(24,918)	(64,388,714)	45,596	(5,952,928)	48
6.8194	(129,303)	(24,925)	(64,413,640)	45,589	(5,940,927)	48
6.8194	(129,303)	(24,933)	(64,438,572)	45,582	(5,928,921)	48
6.8194	(129,303)	(24,940)	(64,463,512)	45,576	(5,916,909)	48
6.8194	(129,303)	(24,947)	(64,488,460)	45,569	(5,904,894)	48
6.8194	(129,303)	(24,955)	(64,513,414)	45,563	(5,892,873)	48
6.8194	(129,303)	(24,962)	(64,538,376)	45,556	(5,880,847)	48
6.8194	(129,303)	(24,969)	(64,563,346)	45,550	(5,868,816)	48
6.8194	(129,303)	(24,977)	(64,588,322)	45,543	(5,856,780)	48
6.8194	(129,303)	(24,984)	(64,613,306)	45,537	(5,844,739)	48
6.8194	(129,303)	(24,991)	(64,638,298)	45,530	(5,832,693)	48
6.8194	(129,303)	(24,999)	(64,663,296)	45,523	(5,820,643)	48
6.8194	(129,303)	(25,006)	(64,688,302)	45,517	(5,808,587)	48
6.8194	(129,303)	(25,013)	(64,713,316)	45,510	(5,796,526)	48
6.8194	(129,303)	(25,021)	(64,738,337)	45,503	(5,784,460)	48
6.8194	(129,303)	(25,028)	(64,763,365)	45,497	(5,772,390)	48
6.8194	(129,303)	(25,035)	(64,788,400)	45,490	(5,760,314)	48
6.8194	(129,303)	(25,043)	(64,813,443)	45,483	(5,748,234)	48
6.8194	(129,303)	(25,050)	(64,838,493)	45,477	(5,736,148)	48
6.8194	(129,303)	(25,058)	(64,863,551)	45,470	(5,724,057)	48
6.8194	(129,303)	(25,065)	(64,888,616)	45,463	(5,711,962)	48
6.8194	(129,303)	(25,072)	(64,913,688)	45,456	(5,699,861)	48
6.8194	(129,303)	(25,080)	(64,938,768)	45,450	(5,687,756)	48
6.8194	(129,303)	(25,087)	(64,963,855)	45,443	(5,675,645)	48
6.8194	(129,303)	(25,094)	(64,988,949)	45,436	(5,663,530)	48
6.8194	(129,303)	(25,102)	(65,014,051)	45,429	(5,651,409)	48
6.8194	(129,303)	(25,109)	(65,039,160)	45,423	(5,639,284)	48
6.8194	(129,303)	(25,117)	(65,064,277)	45,416	(5,627,153)	48
6.8194	(129,303)	(25,124)	(65,089,401)	45,409	(5,615,018)	48
6.8194	(129,303)	(25,131)	(65,114,532)	45,402	(5,602,877)	48
6.8194	(129,303)	(25,139)	(65,139,671)	45,395	(5,590,732)	48
6.8194	(129,303)	(25,146)	(65,164,817)	45,389	(5,578,581)	48
6.8194	(129,303)	(25,154)	(65,189,970)	45,382	(5,566,426)	48
6.8194	(129,303)	(25,161)	(65,215,131)	45,375	(5,554,265)	48
6.8194	(129,303)	(25,168)	(65,240,300)	45,368	(5,542,100)	48
6.8194	(129,303)	(25,176)	(65,265,475)	45,361	(5,529,929)	48
6.8194	(129,303)	(25,183)	(65,290,658)	45,354	(5,517,754)	48
6.8194	(129,303)	(25,190)	(65,315,849)	45,347	(5,505,573)	48
6.8194	(129,303)	(25,198)	(65,341,047)	45,340	(5,493,388)	48

6.8194	(129,303)	(25,205)	(65,366,252)	45,334	(5,481,197)	48
6.8194	(129,303)	(25,213)	(65,391,465)	45,327	(5,469,002)	48
6.8194	(129,303)	(25,220)	(65,416,685)	45,320	(5,456,801)	48
6.8194	(129,303)	(25,228)	(65,441,912)	45,313	(5,444,595)	48
6.8194	(129,303)	(25,235)	(65,467,147)	45,306	(5,432,385)	48
6.8194	(129,303)	(25,242)	(65,492,390)	45,299	(5,420,169)	48
6.8194	(129,303)	(25,250)	(65,517,639)	45,292	(5,407,949)	48
6.8194	(129,303)	(25,257)	(65,542,897)	45,285	(5,395,723)	48
6.8194	(129,303)	(25,265)	(65,568,161)	45,278	(5,383,492)	48
6.8194	(129,303)	(25,272)	(65,593,433)	45,271	(5,371,256)	48
6.8194	(129,303)	(25,279)	(65,618,713)	45,264	(5,359,016)	48
6.8194	(129,303)	(25,287)	(65,643,999)	45,257	(5,346,770)	48
6.8194	(129,303)	(25,294)	(65,669,294)	45,250	(5,334,519)	48
6.8194	(129,303)	(25,302)	(65,694,595)	45,242	(5,322,263)	48
6.8194	(129,303)	(25,309)	(65,719,905)	45,235	(5,310,002)	48
6.8194	(129,303)	(25,317)	(65,745,221)	45,228	(5,297,736)	49
6.8194	(129,303)	(25,324)	(65,770,545)	45,221	(5,285,465)	49
6.8194	(129,303)	(25,331)	(65,795,877)	45,214	(5,273,189)	49
6.8194	(129,303)	(25,339)	(65,821,216)	45,207	(5,260,908)	49
6.8194	(129,303)	(25,346)	(65,846,562)	45,200	(5,248,622)	49
6.8194	(129,303)	(25,354)	(65,871,916)	45,193	(5,236,331)	49
6.8194	(129,303)	(25,361)	(65,897,277)	45,186	(5,224,035)	49
6.8194	(129,303)	(25,369)	(65,922,645)	45,178	(5,211,734)	49
6.8194	(129,303)	(25,376)	(65,948,022)	45,171	(5,199,427)	49
6.8194	(129,303)	(25,384)	(65,973,405)	45,164	(5,187,116)	49
6.8194	(129,303)	(25,391)	(65,998,796)	45,157	(5,174,800)	49
6.8194	(129,303)	(25,398)	(66,024,195)	45,150	(5,162,478)	49
6.8194	(129,303)	(25,406)	(66,049,601)	45,142	(5,150,152)	49
6.8194	(129,303)	(25,413)	(66,075,014)	45,135	(5,137,820)	49
6.8194	(129,303)	(25,421)	(66,100,435)	45,128	(5,125,484)	49
6.8194	(129,303)	(25,428)	(66,125,863)	45,121	(5,113,142)	49
6.8194	(129,303)	(25,436)	(66,151,299)	45,113	(5,100,795)	49
6.8194	(129,303)	(25,443)	(66,176,742)	45,106	(5,088,444)	49
6.8194	(129,303)	(25,451)	(66,202,193)	45,099	(5,076,087)	49
6.8194	(129,303)	(25,458)	(66,227,651)	45,091	(5,063,725)	49
6.8194	(129,303)	(25,466)	(66,253,117)	45,084	(5,051,358)	49
6.8194	(129,303)	(25,473)	(66,278,590)	45,077	(5,038,986)	49
6.8194	(129,303)	(25,481)	(66,304,070)	45,069	(5,026,609)	49
6.8194	(129,303)	(25,488)	(66,329,558)	45,062	(5,014,227)	49
6.8194	(129,303)	(25,496)	(66,355,054)	45,055	(5,001,840)	49
6.8194	(129,303)	(25,503)	(66,380,557)	45,047	(4,989,447)	49
6.8194	(129,303)	(25,511)	(66,406,068)	45,040	(4,977,050)	49
6.8194	(129,303)	(25,518)	(66,431,586)	45,033	(4,964,647)	49
6.8194	(129,303)	(25,525)	(66,457,111)	45,025	(4,952,240)	49
6.8194	(129,303)	(25,533)	(66,482,644)	45,018	(4,939,827)	49
6.8194	(129,303)	(25,540)	(66,508,185)	45,010	(4,927,409)	49
6.8194	(129,303)	(24,961)	(42,741,483)	26,375	(4,910,615)	50
6.8194	(129,303)	(4,910,615)	(47,652,098)	27,078	(8,755)	0
6.8194	(129,303)	(8,755)	(47,660,854)	27,070	(8,757)	102
6.8194	(129,303)	(8,757)	(47,669,611)	27,063	(8,759)	102
6.8194	(129,303)	(8,759)	(47,678,369)	27,055	(8,760)	102
6.8194	(129,303)	(8,760)	(47,687,130)	27,047	(8,762)	102
6.8194	(129,303)	(8,762)	(47,695,891)	27,040	(8,763)	102
6.8194	(129,303)	(8,763)	(47,704,655)	27,032	(8,765)	102
6.8194	(129,303)	(8,765)	(47,713,420)	27,024	(8,767)	102
6.8194	(129,303)	(8,767)	(47,722,186)	27,017	(8,768)	102

6.8194	(129,303)	(8,768)	(47,730,954)	27,009	(8,770)	102
6.8194	(129,303)	(8,770)	(47,739,724)	27,001	(8,771)	102
6.8194	(129,303)	(8,771)	(47,748,496)	26,994	(8,773)	102
6.8194	(129,303)	(8,773)	(47,757,269)	26,986	(8,775)	102
6.8194	(129,303)	(8,775)	(47,766,043)	26,978	(8,776)	102
6.8194	(129,303)	(8,776)	(47,774,820)	26,971	(8,778)	102
6.8194	(129,303)	(8,778)	(47,783,598)	26,963	(8,780)	102
6.8194	(129,303)	(8,780)	(47,792,377)	26,955	(8,781)	102
6.8194	(129,303)	(8,781)	(47,801,158)	26,947	(8,783)	102
6.8194	(129,303)	(8,783)	(47,809,941)	26,940	(8,784)	102
6.8194	(129,303)	(8,784)	(47,818,725)	26,932	(8,786)	102
6.8194	(129,303)	(8,786)	(47,827,511)	26,924	(8,788)	102
6.8194	(129,303)	(8,788)	(47,836,299)	26,916	(8,789)	102
6.8194	(129,303)	(8,789)	(47,845,088)	26,909	(8,791)	102
6.8194	(129,303)	(8,791)	(47,853,879)	26,901	(8,792)	102
6.8194	(129,303)	(8,792)	(47,862,671)	26,893	(8,794)	102
6.8194	(129,303)	(8,794)	(47,871,465)	26,885	(8,796)	102
6.8194	(129,303)	(8,796)	(47,880,261)	26,878	(8,797)	102
6.8194	(129,303)	(8,797)	(47,889,058)	26,870	(8,799)	102
6.8194	(129,303)	(8,799)	(47,897,857)	26,862	(8,800)	102
6.8194	(129,303)	(8,800)	(47,906,658)	26,854	(8,802)	102
6.8194	(129,303)	(8,802)	(47,915,460)	26,847	(8,804)	102
6.8194	(129,303)	(8,804)	(47,924,263)	26,839	(8,805)	102
6.8194	(129,303)	(8,805)	(47,933,069)	26,831	(8,807)	102
6.8194	(129,303)	(8,807)	(47,941,876)	26,823	(8,809)	102
6.8194	(129,303)	(8,809)	(47,950,684)	26,816	(8,810)	102
6.8194	(129,303)	(8,810)	(47,959,494)	26,808	(8,812)	102
6.8194	(129,303)	(8,812)	(47,968,306)	26,800	(8,813)	102
6.8194	(129,303)	(8,813)	(47,977,120)	26,792	(8,815)	102
6.8194	(129,303)	(8,815)	(47,985,935)	26,784	(8,817)	102
6.8194	(129,303)	(8,817)	(47,994,751)	26,777	(8,818)	102
6.8194	(129,303)	(8,818)	(48,003,570)	26,769	(8,820)	102
6.8194	(129,303)	(8,820)	(48,012,390)	26,761	(8,822)	102
6.8194	(129,303)	(8,822)	(48,021,211)	26,753	(8,823)	102
6.8194	(129,303)	(8,823)	(48,030,034)	26,745	(8,825)	102
6.8194	(129,303)	(8,825)	(48,038,859)	26,738	(8,826)	102
6.8194	(129,303)	(8,826)	(48,047,686)	26,730	(8,828)	102
6.8194	(129,303)	(8,828)	(48,056,514)	26,722	(8,830)	102
6.8194	(129,303)	(8,830)	(48,065,343)	26,714	(8,831)	102
6.8194	(129,303)	(8,831)	(48,074,174)	26,706	(8,833)	102
6.8194	(129,303)	(8,833)	(48,083,007)	26,698	(8,835)	102
6.8194	(129,303)	(8,835)	(48,091,842)	26,691	(8,836)	102
6.8194	(129,303)	(8,836)	(48,100,678)	26,683	(8,838)	102
6.8194	(129,303)	(8,838)	(48,109,516)	26,675	(8,839)	102
6.8194	(129,303)	(8,839)	(48,118,355)	26,667	(8,841)	102
6.8194	(129,303)	(8,841)	(48,127,196)	26,659	(8,843)	102
6.8194	(129,303)	(8,843)	(48,136,039)	26,651	(8,844)	102
6.8194	(129,303)	(8,844)	(48,144,883)	26,643	(8,846)	102
6.8194	(129,303)	(8,846)	(48,153,729)	26,636	(8,848)	102
6.8194	(129,303)	(8,848)	(48,162,576)	26,628	(8,849)	102
6.8194	(129,303)	(8,849)	(48,171,426)	26,620	(8,851)	102
6.8194	(129,303)	(8,851)	(48,180,276)	26,612	(8,852)	102
6.8194	(129,303)	(8,852)	(48,189,129)	26,604	(8,854)	102
6.8194	(129,303)	(8,854)	(48,197,983)	26,596	(8,856)	102
6.8194	(129,303)	(8,856)	(48,206,838)	26,588	(8,857)	102
6.8194	(129,303)	(8,857)	(48,215,696)	26,580	(8,859)	102

6.8194	(129,303)	(8,859)	(48,224,555)	26,572	(8,861)	102
6.8194	(129,303)	(8,861)	(48,233,415)	26,565	(8,862)	102
6.8194	(129,303)	(8,862)	(48,242,277)	26,557	(8,864)	102
6.8194	(129,303)	(8,864)	(48,251,141)	26,549	(8,865)	102
6.8194	(129,303)	(8,865)	(48,260,006)	26,541	(8,867)	102
6.8194	(129,303)	(8,867)	(48,268,873)	26,533	(8,869)	102
6.8194	(129,303)	(8,869)	(48,277,742)	26,525	(8,870)	102
6.8194	(129,303)	(8,870)	(48,286,612)	26,517	(8,872)	102
6.8194	(129,303)	(8,872)	(48,295,484)	26,509	(8,874)	102
6.8194	(129,303)	(8,874)	(48,304,358)	26,501	(8,875)	102
6.8194	(129,303)	(8,875)	(48,313,233)	26,493	(8,877)	102
6.8194	(129,303)	(8,877)	(48,322,110)	26,485	(8,878)	102
6.8194	(129,303)	(8,878)	(48,330,988)	26,477	(8,880)	102
6.8194	(129,303)	(8,880)	(48,339,868)	26,469	(8,882)	102
6.8194	(129,303)	(8,882)	(48,348,750)	26,461	(8,883)	102
6.8194	(129,303)	(8,883)	(48,357,633)	26,453	(8,885)	102
6.8194	(129,303)	(8,885)	(48,366,518)	26,446	(8,887)	102
6.8194	(129,303)	(8,887)	(48,375,405)	26,438	(8,888)	102
6.8194	(129,303)	(8,888)	(48,384,293)	26,430	(8,890)	102
6.8194	(129,303)	(8,890)	(48,393,183)	26,422	(8,892)	102
6.8194	(129,303)	(8,892)	(48,402,075)	26,414	(8,893)	102
6.8194	(129,303)	(8,893)	(48,410,968)	26,406	(8,895)	102
6.8194	(129,303)	(8,895)	(48,419,862)	26,398	(8,896)	102
6.8194	(129,303)	(8,896)	(48,428,759)	26,390	(8,898)	102
6.8194	(129,303)	(8,898)	(48,437,657)	26,382	(8,900)	102
6.8194	(129,303)	(8,900)	(48,446,557)	26,374	(8,901)	102
6.8194	(129,303)	(8,901)	(48,455,458)	26,366	(8,903)	102
6.8194	(129,303)	(8,903)	(48,464,361)	26,358	(8,905)	102
6.8194	(129,303)	(8,905)	(48,473,265)	26,350	(8,906)	102
6.8194	(129,303)	(8,906)	(48,482,172)	26,342	(8,908)	102
6.8194	(129,303)	(8,908)	(48,491,079)	26,334	(8,909)	102
6.8194	(129,303)	(8,909)	(48,499,989)	26,326	(8,911)	102
6.8194	(129,303)	(8,911)	(48,508,900)	26,318	(8,913)	102
6.8194	(129,303)	(8,913)	(48,517,813)	26,310	(8,914)	102
6.8194	(129,303)	(8,914)	(48,526,727)	26,302	(8,916)	102
6.8194	(129,303)	(8,916)	(48,535,643)	26,294	(8,918)	102
6.8194	(129,303)	(8,918)	(48,544,561)	26,285	(8,919)	102
6.8194	(129,303)	(8,919)	(48,553,480)	26,277	(8,921)	102
6.8194	(129,303)	(8,921)	(48,562,401)	26,269	(8,923)	102
6.8194	(129,303)	(8,923)	(48,571,324)	26,261	(8,924)	102
6.8194	(129,303)	(8,924)	(48,580,248)	26,253	(8,926)	102
6.8194	(129,303)	(8,926)	(48,589,174)	26,245	(8,928)	102
6.8194	(129,303)	(8,928)	(48,598,101)	26,237	(8,929)	102
6.8194	(129,303)	(8,929)	(48,607,031)	26,229	(8,931)	102
6.8194	(129,303)	(8,931)	(48,615,961)	26,221	(8,932)	102
6.8194	(129,303)	(8,932)	(48,624,894)	26,213	(8,934)	102
6.8194	(129,303)	(8,934)	(48,633,828)	26,205	(8,936)	102
6.8194	(129,303)	(8,936)	(48,642,764)	26,197	(8,937)	102
6.8194	(129,303)	(8,937)	(48,651,701)	26,189	(8,939)	102
6.8194	(129,303)	(8,939)	(48,660,640)	26,181	(8,941)	102
6.8194	(129,303)	(8,941)	(48,669,581)	26,173	(8,942)	102
6.8194	(129,303)	(8,942)	(48,678,523)	26,164	(8,944)	102
6.8194	(129,303)	(8,944)	(48,687,467)	26,156	(8,946)	102
6.8194	(129,303)	(8,946)	(48,696,412)	26,148	(8,947)	102
6.8194	(129,303)	(8,947)	(48,705,360)	26,140	(8,949)	102
6.8194	(129,303)	(8,949)	(48,714,308)	26,132	(8,951)	102

6.8194	(129,303)	(8,951)	(48,723,259)	26,124	(8,952)	102
6.8194	(129,303)	(8,952)	(48,732,211)	26,116	(8,954)	102
6.8194	(129,303)	(8,954)	(48,741,165)	26,108	(8,955)	102
6.8194	(129,303)	(8,955)	(48,750,120)	26,100	(8,957)	102
6.8194	(129,303)	(8,957)	(48,759,077)	26,091	(8,959)	102
6.8194	(129,303)	(8,959)	(48,768,036)	26,083	(8,960)	102
6.8194	(129,303)	(8,960)	(48,776,997)	26,075	(8,962)	102
6.8194	(129,303)	(8,962)	(48,785,959)	26,067	(8,964)	102
6.8194	(129,303)	(8,964)	(48,794,922)	26,059	(8,965)	102
6.8194	(129,303)	(8,965)	(48,803,888)	26,051	(8,967)	102
6.8194	(129,303)	(8,967)	(48,812,855)	26,043	(8,969)	102
6.8194	(129,303)	(8,969)	(48,821,823)	26,034	(8,970)	102
6.8194	(129,303)	(8,970)	(48,830,793)	26,026	(8,972)	102
6.8194	(129,303)	(8,972)	(48,839,765)	26,018	(8,974)	102
6.8194	(129,303)	(8,974)	(48,848,739)	26,010	(8,975)	102
6.8194	(129,303)	(8,975)	(48,857,714)	26,002	(8,977)	102
6.8194	(129,303)	(8,977)	(48,866,691)	25,994	(8,979)	102
6.8194	(129,303)	(8,979)	(48,875,669)	25,985	(8,980)	102
6.8194	(129,303)	(8,980)	(48,884,650)	25,977	(8,982)	102
6.8194	(129,303)	(8,982)	(48,893,631)	25,969	(8,983)	102
6.8194	(129,303)	(8,983)	(48,902,615)	25,961	(8,985)	102
6.8194	(129,303)	(8,985)	(48,911,600)	25,953	(8,987)	102
6.8194	(129,303)	(8,987)	(48,920,587)	25,944	(8,988)	102
6.8194	(129,303)	(8,988)	(48,929,575)	25,936	(8,990)	102
6.8194	(129,303)	(8,990)	(48,938,565)	25,928	(8,992)	102
6.8194	(129,303)	(8,992)	(48,947,557)	25,920	(8,993)	102
6.8194	(129,303)	(8,993)	(48,956,550)	25,912	(8,995)	102
6.8194	(129,303)	(8,995)	(48,965,545)	25,903	(8,997)	102
6.8194	(129,303)	(8,997)	(48,974,542)	25,895	(8,998)	102
6.8194	(129,303)	(8,998)	(48,983,540)	25,887	(9,000)	102
6.8194	(129,303)	(9,000)	(48,992,540)	25,879	(9,002)	102
6.8194	(129,303)	(9,002)	(49,001,542)	25,870	(9,003)	102
6.8194	(129,303)	(9,003)	(49,010,545)	25,862	(9,005)	102
6.8194	(129,303)	(9,005)	(49,019,550)	25,854	(9,007)	102
6.8194	(129,303)	(9,007)	(49,028,557)	25,846	(9,008)	102
6.8194	(129,303)	(9,008)	(49,037,565)	25,837	(9,010)	102
6.8194	(129,303)	(9,010)	(49,046,575)	25,829	(9,012)	102
6.8194	(129,303)	(9,012)	(49,055,586)	25,821	(9,013)	102
6.8194	(129,303)	(9,013)	(49,064,600)	25,813	(9,015)	102
6.8194	(129,303)	(9,015)	(49,073,614)	25,804	(9,017)	102
6.8194	(129,303)	(9,017)	(49,082,631)	25,796	(9,018)	102
6.8194	(129,303)	(9,018)	(49,091,649)	25,788	(9,020)	102
6.8194	(129,303)	(9,020)	(49,100,669)	25,780	(9,021)	102
6.8194	(129,303)	(9,021)	(49,109,690)	25,771	(9,023)	102
6.8194	(129,303)	(9,023)	(49,118,714)	25,763	(9,025)	102
6.8194	(129,303)	(9,025)	(49,127,738)	25,755	(9,026)	102
6.8194	(129,303)	(9,026)	(49,136,765)	25,746	(9,028)	102
6.8194	(129,303)	(9,028)	(49,145,793)	25,738	(9,030)	102
6.8194	(129,303)	(9,030)	(49,154,823)	25,730	(9,031)	102
6.8194	(129,303)	(9,031)	(49,163,854)	25,722	(9,033)	102
6.8194	(129,303)	(9,033)	(49,172,887)	25,713	(9,035)	102
6.8194	(129,303)	(9,035)	(49,181,922)	25,705	(9,036)	102
6.8194	(129,303)	(9,036)	(49,190,958)	25,697	(9,038)	102
6.8194	(129,303)	(9,038)	(49,199,997)	25,688	(9,040)	102
6.8194	(129,303)	(9,040)	(49,209,036)	25,680	(9,041)	102
6.8194	(129,303)	(9,041)	(49,218,078)	25,672	(9,043)	102

6.8194	(129,303)	(9,043)	(49,227,121)	25,663	(9,045)	102
6.8194	(129,303)	(9,045)	(49,236,165)	25,655	(9,046)	102
6.8194	(129,303)	(9,046)	(49,245,212)	25,647	(9,048)	102
6.8194	(129,303)	(9,048)	(49,254,260)	25,638	(9,050)	102
6.8194	(129,303)	(11,352)	(25,732,555)	1,254	(4,728)	81
6.8194	(144,659)	(4,728)	(25,737,283)	1,248	(4,729)	102
6.8194	(144,659)	(4,729)	(25,742,012)	1,241	(4,730)	102
6.8194	(144,659)	(4,730)	(25,746,741)	1,235	(4,731)	102
6.8194	(144,659)	(4,731)	(25,751,472)	1,228	(4,731)	102
6.8194	(144,659)	(4,731)	(25,756,203)	1,222	(4,732)	102
6.8194	(144,659)	(4,732)	(25,760,936)	1,215	(4,733)	102
6.8194	(144,659)	(4,733)	(25,765,669)	1,208	(4,734)	102
6.8194	(144,659)	(4,734)	(25,770,403)	1,202	(4,735)	102
6.8194	(144,659)	(4,735)	(25,775,138)	1,195	(4,736)	102
6.8194	(144,659)	(4,736)	(25,779,873)	1,188	(4,737)	102
6.8194	(144,659)	(4,737)	(25,784,610)	1,182	(4,738)	102
6.8194	(144,659)	(4,738)	(25,789,348)	1,175	(4,738)	102
6.8194	(144,659)	(4,738)	(25,794,086)	1,169	(4,739)	102
6.8194	(144,659)	(4,739)	(25,798,825)	1,162	(4,740)	102
6.8194	(144,659)	(4,740)	(25,803,565)	1,155	(4,741)	102
6.8194	(144,659)	(4,741)	(25,808,306)	1,149	(4,742)	102
6.8194	(144,659)	(4,742)	(25,813,048)	1,142	(4,743)	102
6.8194	(144,659)	(4,743)	(25,817,791)	1,136	(4,744)	102
6.8194	(144,659)	(4,744)	(25,822,535)	1,129	(4,744)	102
6.8194	(144,659)	(4,744)	(25,827,279)	1,122	(4,745)	102
6.8194	(144,659)	(4,745)	(25,832,025)	1,116	(4,746)	102
6.8194	(144,659)	(4,746)	(25,836,771)	1,109	(4,747)	102
6.8194	(144,659)	(4,747)	(25,841,518)	1,102	(4,748)	102
6.8194	(144,659)	(4,748)	(25,846,266)	1,096	(4,749)	102
6.8194	(144,659)	(4,749)	(25,851,015)	1,089	(4,750)	102
6.8194	(144,659)	(4,750)	(25,855,764)	1,082	(4,751)	102
6.8194	(144,659)	(4,751)	(25,860,515)	1,076	(4,751)	102
6.8194	(144,659)	(4,751)	(25,865,267)	1,069	(4,752)	102
6.8194	(144,659)	(4,752)	(25,870,019)	1,062	(4,753)	102
6.8194	(144,659)	(4,753)	(25,874,772)	1,056	(4,754)	102
6.8194	(144,659)	(4,754)	(25,879,526)	1,049	(4,755)	102
6.8194	(144,659)	(4,755)	(25,884,281)	1,042	(4,756)	102
6.8194	(144,659)	(4,756)	(25,889,037)	1,036	(4,757)	102
6.8194	(144,659)	(4,757)	(25,893,794)	1,029	(4,758)	102
6.8194	(144,659)	(4,758)	(25,898,551)	1,022	(4,758)	102
6.8194	(144,659)	(4,758)	(25,903,310)	1,016	(4,759)	102
6.8194	(144,659)	(4,759)	(25,908,069)	1,009	(4,760)	102
6.8194	(144,659)	(4,760)	(25,912,829)	1,002	(4,761)	102
6.8194	(144,659)	(4,761)	(25,917,590)	996	(4,762)	102
6.8194	(144,659)	(4,762)	(25,922,352)	989	(4,763)	102
6.8194	(144,659)	(4,763)	(25,927,115)	982	(4,764)	102
6.8194	(144,659)	(4,764)	(25,931,879)	976	(4,765)	102
6.8194	(144,659)	(4,765)	(25,936,643)	969	(4,765)	102
6.8194	(144,659)	(4,765)	(25,941,409)	962	(4,766)	102
6.8194	(144,659)	(4,766)	(25,946,175)	956	(4,767)	102
6.8194	(144,659)	(4,767)	(25,950,942)	949	(4,768)	102
6.8194	(144,659)	(4,768)	(25,955,711)	942	(4,769)	102
6.8194	(144,659)	(4,769)	(25,960,479)	935	(4,770)	102
6.8194	(144,659)	(4,770)	(25,965,249)	929	(4,771)	102
6.8194	(144,659)	(4,771)	(25,970,020)	922	(4,772)	102
6.8194	(144,659)	(4,772)	(25,974,792)	915	(4,772)	102

6.8194	(144,659)	(4,772)	(25,979,564)	909	(4,773)	102
6.8194	(144,659)	(4,773)	(25,984,337)	902	(4,774)	102
6.8194	(144,659)	(4,774)	(25,989,112)	895	(4,775)	102
6.8194	(144,659)	(4,775)	(25,993,887)	888	(4,776)	102
6.8194	(144,659)	(4,776)	(25,998,663)	882	(4,777)	102
6.8194	(144,659)	(4,777)	(26,003,440)	875	(4,778)	102
6.8194	(144,659)	(4,778)	(26,008,217)	868	(4,779)	102
6.8194	(144,659)	(4,779)	(26,012,996)	862	(4,779)	102
6.8194	(144,659)	(4,779)	(26,017,775)	855	(4,780)	102
6.8194	(144,659)	(4,780)	(26,022,556)	848	(4,781)	102
6.8194	(144,659)	(4,781)	(26,027,337)	841	(4,782)	102
6.8194	(144,659)	(4,782)	(26,032,119)	835	(4,783)	102
6.8194	(144,659)	(4,783)	(26,036,902)	828	(4,784)	102
6.8194	(144,659)	(4,784)	(26,041,686)	821	(4,785)	102
6.8194	(144,659)	(4,785)	(26,046,471)	814	(4,786)	102
6.8194	(144,659)	(4,786)	(26,051,256)	808	(4,787)	102
6.8194	(144,659)	(4,787)	(26,056,043)	801	(4,787)	102
6.8194	(144,659)	(4,787)	(26,060,830)	794	(4,788)	102
6.8194	(144,659)	(4,788)	(26,065,619)	787	(4,789)	102
6.8194	(144,659)	(4,789)	(26,070,408)	781	(4,790)	102
6.8194	(144,659)	(4,790)	(26,075,198)	774	(4,791)	102
6.8194	(144,659)	(4,791)	(26,079,989)	767	(4,792)	102
6.8194	(144,659)	(4,792)	(26,084,781)	760	(4,793)	102
6.8194	(144,659)	(4,793)	(26,089,573)	753	(4,794)	102
6.8194	(144,659)	(4,794)	(26,094,367)	747	(4,794)	102
6.8194	(144,659)	(4,794)	(26,099,161)	740	(4,795)	102
6.8194	(144,659)	(4,795)	(26,103,957)	733	(4,796)	102
6.8194	(144,659)	(4,796)	(26,108,753)	726	(4,797)	102
6.8194	(144,659)	(4,797)	(26,113,550)	720	(4,798)	102
6.8194	(144,659)	(4,798)	(26,118,348)	713	(4,799)	102
6.8194	(144,659)	(4,799)	(26,123,147)	706	(4,800)	102
6.8194	(144,659)	(4,800)	(26,127,946)	699	(4,801)	102
6.8194	(144,659)	(4,801)	(26,132,747)	692	(4,801)	102
6.8194	(144,659)	(4,801)	(26,137,548)	686	(4,802)	102
6.8194	(144,659)	(4,802)	(26,142,351)	679	(4,803)	102
6.8194	(144,659)	(4,803)	(26,147,154)	672	(4,804)	102
6.8194	(144,659)	(4,804)	(26,151,958)	665	(4,805)	102
6.8194	(144,659)	(4,805)	(26,156,763)	658	(4,806)	102
6.8194	(144,659)	(4,806)	(26,161,569)	652	(4,807)	102
6.8194	(144,659)	(4,807)	(26,166,376)	645	(4,808)	102
6.8194	(144,659)	(4,808)	(26,171,184)	638	(4,809)	102
6.8194	(144,659)	(4,809)	(26,175,992)	631	(4,809)	102
6.8194	(144,659)	(4,809)	(26,180,802)	624	(4,810)	102
6.8194	(144,659)	(4,810)	(26,185,612)	617	(4,811)	102
6.8194	(144,659)	(4,811)	(26,190,423)	611	(4,812)	102
6.8194	(144,659)	(4,812)	(26,195,235)	604	(4,813)	102
6.8194	(144,659)	(4,813)	(26,200,048)	597	(4,814)	102
6.8194	(144,659)	(4,814)	(26,204,862)	590	(4,815)	102
6.8194	(144,659)	(4,815)	(26,209,677)	583	(4,816)	102
6.8194	(144,659)	(4,816)	(26,214,492)	576	(4,817)	102
6.8194	(144,659)	(4,817)	(26,219,309)	570	(4,817)	102
6.8194	(144,659)	(4,817)	(26,224,126)	563	(4,818)	102
6.8194	(144,659)	(4,818)	(26,228,945)	556	(4,819)	102
6.8194	(144,659)	(4,819)	(26,233,764)	549	(4,820)	102
6.8194	(144,659)	(4,820)	(26,238,584)	542	(4,821)	102
6.8194	(144,659)	(4,821)	(26,243,405)	535	(4,822)	102

6.8194	(144,659)	(4,822)	(26,248,227)	529	(4,823)	102
6.8194	(144,659)	(4,823)	(26,253,049)	522	(4,824)	102
6.8194	(144,659)	(4,824)	(26,257,873)	515	(4,824)	102
6.8194	(144,659)	(4,824)	(26,262,697)	508	(4,825)	102
6.8194	(144,659)	(4,825)	(26,267,523)	501	(4,826)	102
6.8194	(144,659)	(4,826)	(26,272,349)	494	(4,827)	102
6.8194	(144,659)	(4,827)	(26,277,176)	487	(4,828)	102
6.8194	(144,659)	(4,828)	(26,282,004)	480	(4,829)	102
6.8194	(144,659)	(4,829)	(26,286,833)	474	(4,830)	102
6.8194	(144,659)	(4,830)	(26,291,663)	467	(4,831)	102
6.8194	(144,659)	(4,831)	(26,296,493)	460	(4,832)	102
6.8194	(144,659)	(4,832)	(26,301,325)	453	(4,832)	102
6.8194	(144,659)	(4,832)	(26,306,158)	446	(4,833)	102
6.8194	(144,659)	(4,833)	(26,310,991)	439	(4,834)	102
6.8194	(144,659)	(4,834)	(26,315,825)	432	(4,835)	102
6.8194	(144,659)	(4,835)	(26,320,660)	425	(4,836)	102
6.8194	(144,659)	(4,836)	(26,325,496)	418	(4,837)	102
6.8194	(144,659)	(4,837)	(26,330,333)	412	(4,838)	102
6.8194	(144,659)	(4,838)	(26,335,171)	405	(4,839)	102
6.8194	(144,659)	(4,839)	(26,340,010)	398	(4,840)	102
6.8194	(144,659)	(4,840)	(26,344,849)	391	(4,840)	102
6.8194	(144,659)	(4,840)	(26,349,690)	384	(4,841)	102
6.8194	(144,659)	(4,841)	(26,354,531)	377	(4,842)	102
6.8194	(144,659)	(4,842)	(26,359,373)	370	(4,843)	102
6.8194	(144,659)	(4,843)	(26,364,216)	363	(4,844)	102
6.8194	(144,659)	(4,844)	(26,369,060)	356	(4,845)	102
6.8194	(144,659)	(4,845)	(26,373,905)	349	(4,846)	102
6.8194	(144,659)	(4,846)	(26,378,751)	342	(4,847)	102
6.8194	(144,659)	(4,847)	(26,383,598)	336	(4,848)	102
6.8194	(144,659)	(4,848)	(26,388,445)	329	(4,848)	102
6.8194	(144,659)	(4,848)	(26,393,294)	322	(4,849)	102
6.8194	(144,659)	(4,849)	(26,398,143)	315	(4,850)	102
6.8194	(144,659)	(4,850)	(26,402,993)	308	(4,851)	102
6.8194	(144,659)	(4,851)	(26,407,845)	301	(4,852)	102
6.8194	(144,659)	(4,852)	(26,412,697)	294	(4,853)	102
6.8194	(144,659)	(4,853)	(26,417,550)	287	(4,854)	102
6.8194	(144,659)	(4,854)	(26,422,403)	280	(4,855)	102
6.8194	(144,659)	(4,855)	(26,427,258)	273	(4,856)	102
6.8194	(144,659)	(4,856)	(26,432,114)	266	(4,856)	102
6.8194	(144,659)	(4,856)	(26,436,970)	259	(4,857)	102
6.8194	(144,659)	(4,857)	(26,441,828)	252	(4,858)	102
6.8194	(144,659)	(4,858)	(26,446,686)	245	(4,859)	102
6.8194	(144,659)	(4,859)	(26,451,545)	238	(4,860)	102
6.8194	(144,659)	(4,860)	(26,456,405)	231	(4,861)	102
6.8194	(144,659)	(4,861)	(26,461,266)	224	(4,862)	102
6.8194	(144,659)	(4,862)	(26,466,128)	217	(4,863)	102
6.8194	(144,659)	(4,863)	(26,470,991)	210	(4,864)	102
6.8194	(144,659)	(4,864)	(26,475,854)	203	(4,865)	102
6.8194	(144,659)	(4,865)	(26,480,719)	196	(4,865)	102
6.8194	(144,659)	(4,865)	(26,485,584)	189	(4,866)	102
6.8194	(144,659)	(4,866)	(26,490,451)	182	(4,867)	102
6.8194	(144,659)	(4,867)	(26,495,318)	175	(4,868)	102
6.8194	(144,659)	(4,868)	(26,500,186)	169	(4,869)	102
6.8194	(144,659)	(4,869)	(26,505,055)	162	(4,870)	102
6.8194	(144,659)	(4,870)	(26,509,925)	155	(4,871)	102
6.8194	(144,659)	(4,871)	(26,514,796)	148	(4,872)	102

6.8194	(144,659)	(4,872)	(26,519,667)	141	(4,873)	102
6.8194	(144,659)	(4,873)	(26,524,540)	134	(4,873)	102
6.8194	(144,659)	(4,873)	(26,529,413)	127	(4,874)	102
6.8194	(144,659)	(4,874)	(26,534,288)	120	(4,875)	102
6.8194	(144,659)	(4,875)	(26,539,163)	113	(4,876)	102
6.8194	(144,659)	(4,876)	(26,544,039)	105	(4,877)	102
6.8194	(144,659)	(4,877)	(26,548,916)	98	(4,878)	102
6.8194	(144,659)	(4,878)	(26,553,794)	91	(4,879)	102
6.8194	(144,659)	(4,879)	(26,558,673)	84	(4,880)	102
6.8194	(144,659)	(4,880)	(26,563,553)	77	(4,881)	102
6.8194	(144,659)	(4,881)	(26,568,433)	70	(4,882)	102
6.8194	(144,659)	(4,882)	(26,573,315)	63	(4,882)	102
6.8194	(144,659)	(4,882)	(26,578,197)	56	(4,883)	102
6.8194	(144,659)	(4,883)	(26,583,081)	49	(4,884)	102
6.8194	(144,659)	(4,884)	(26,587,965)	42	(4,885)	102
6.8194	(144,659)	(4,885)	(26,592,850)	35	(4,886)	102
6.8194	(144,659)	(4,886)	(26,597,736)	28	(4,887)	102
6.8194	(144,659)	(4,887)	(26,602,623)	21	(4,888)	102
6.8194	(144,659)	(4,888)	(26,607,511)	14	(4,889)	102
6.8194	(144,659)	(4,889)	(26,612,400)	7	(4,890)	102
6.8194	(144,659)	(4,890)	0	0	0	102
NET $'000	(22,438)	(22,438)				