Centre Number			Candidate Number		
Surname					
Other Names					
Candidate Signature					



Free-Standing Mathematics Qualification Higher Level June 2012

Financial Calculations

Unit 4

Thursday 24 May 2012 9.00 am to 10.15 am

For this paper you must have:

- a clean copy of the Data Sheet (enclosed)
- a calculator
- a protractor
- a ruler.

Time allowed

• 1 hour 15 minutes

Instructions

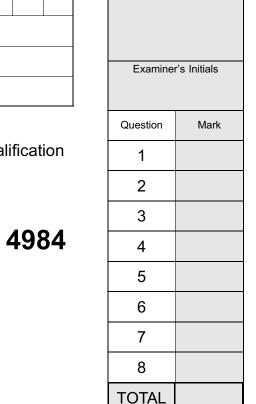
- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page.
- Do all rough work in this book. Cross through any work that you do not want to be marked.
- You may **not** refer to the copy of the Data Sheet that was available prior to this examination. A clean copy is enclosed for your use.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 50.
- You are expected to use a calculator where appropriate.

Advice

• In all calculations, show clearly how you work out your answer.



For Examiner's Use



Section A

Answer all questions in the spaces provided.

Use Bank accounts on page 2 of the Data Sheet.

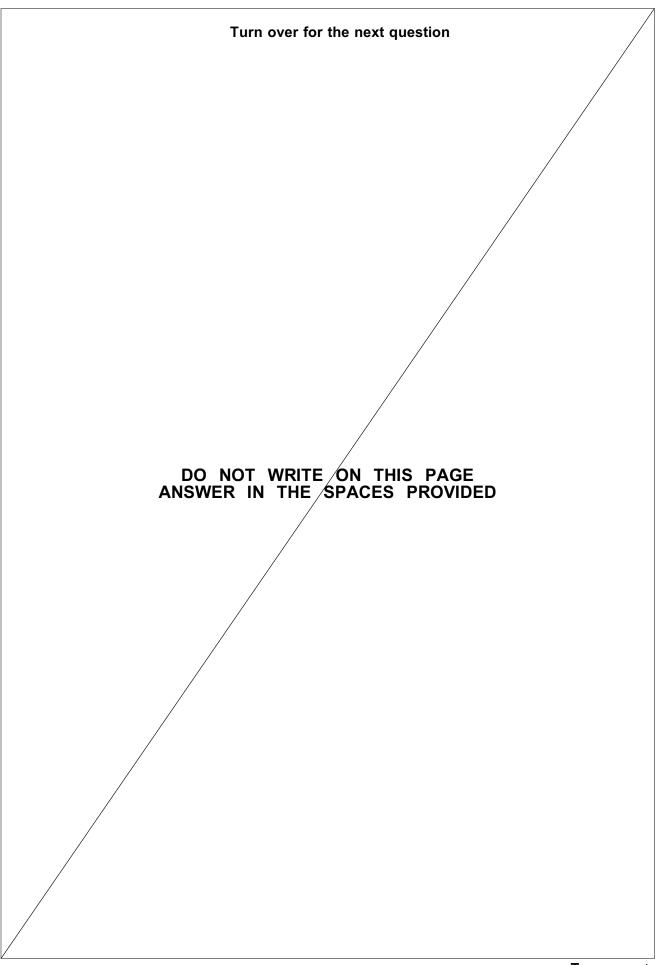
- Matt deposits £2500 in the Standard account for 12 months. It earns compound interest at the rate of 0.58 % paid every 3 months.
- 1 (a) Complete the table below.

	Starting value (£)	Interest (£)	Final value (£)
First 3 months	2500.00	14.50	2514.50
Second 3 months	2514.50	14.58	2529.08
Third 3 months	2529.08		
Fourth 3 months			



1 (b)

1 (c)





Section B

Answer all questions in the spaces provided.

Use High street chemist on page 2 of the Data Sheet.

2 (a)	Carol bought mascara. The usual price of the mascara was £8.99. How much did Carol pay?
	Answer
	(3 marks)
2 (b)	Rachel bought three lipsticks which normally cost £5.49 each. In the sale, with the 'Buy two get one free' offer, Rachel paid £10.98 for the three lipsticks. How much did Rachel pay for each lipstick?
	Answer
	(2 marks)

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3 (a)	Susie and Louise spend £28 on a Sparkling Beauty Collection pack. They decide to divide the cost in the ratio of 4:3, with Susie paying more.
	How much does Susie pay?
	Answer(3 marks)
3 (b)	Many articles are cheaper in airport duty-free shops. In Lisbon airport, a bottle of perfume costs € 84. The exchange rate is € 1.21 to £ 1.
	Calculate the cost of the bottle of perfume in pounds.
	Answer(3 marks)

Turn over for the next question



Turn over ▶

Section C

6

Answer all questions in the spaces provided.

Use Car parking on page 3 of the Data Sheet.

4 (a) Complete the spreadsheet to give the most expensive cost as a percentage of the cheapest cost.

Give the percentages to the nearest integer.

	A	В	С	D
1	Airport	Cheapest cost for parking (£)	Most expensive cost for parking (£)	Most expensive cost as a percentage of cheapest cost
2	Birmingham	44.64	71.50	
3	Gatwick	38.90	51.20	
4	Heathrow	63.80	157.00	
5	Manchester	29.99	79.99	
6	Stansted	36.70	47.30	

	(5 marks)
	Space for working
4 (b)	State a formula which would give the content of cell D6.
	Answer
	(1 mark)



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4 (c)	Javian books and pre-pays £99.22 for four weeks' car parking at Heathrow. This charge is only 22.55% of the amount which he would have been charged if he had not prepaid.
	Calculate the charge which Javian would have paid if he had not prepaid.
	Answer(3 marks)
4 (d)	Colin says that he pays about £32 per week for his airport parking.
	This amount is correct to the nearest pound.
	What is the minimum possible cost to Colin for three weeks' parking?
	Answer

Turn over for the next question



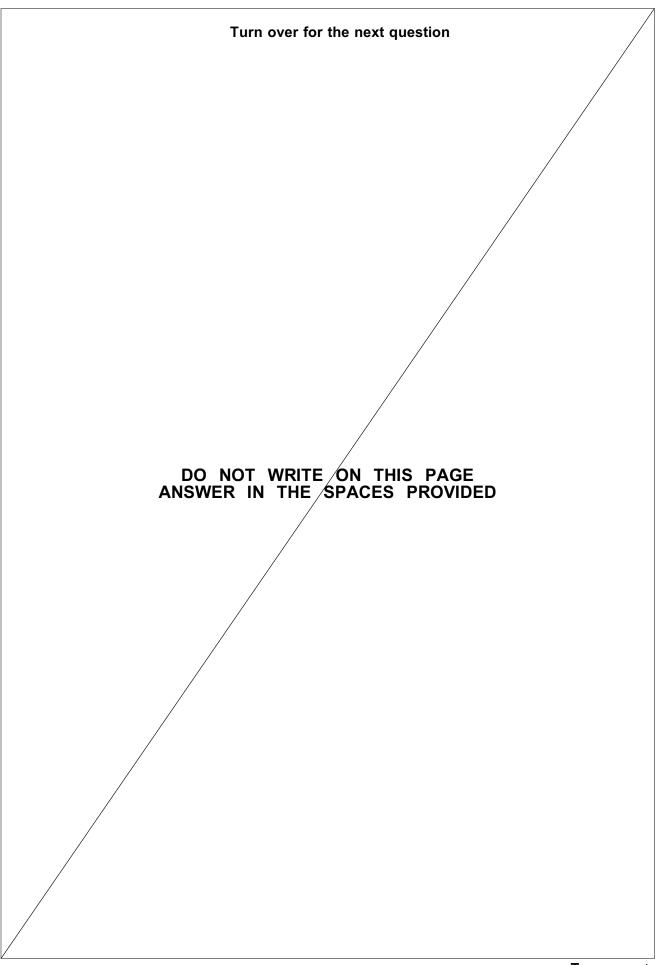
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Section D

Answer all questions in the spaces provided.

	Use Solid Oak Credit Services on page 3 of the Data Sheet.
5	Daniel wants to buy an iPad. He decides to borrow £750 and to repay the loan over 24 months.
5 (a)	Write down the monthly repayment which Daniel will make.
	Answer(1 mark)
5 (b)	By finding the total repayments which Daniel makes to repay the loan, calculate the total interest which he will be charged for borrowing this money.
	Answer(3 marks)
5 (c)	Express the total interest which Daniel will be charged for borrowing this money as a percentage of the amount borrowed.
	Answer
	(2 marks)







Section E

Answer all questions in the spaces provided.

Use Taxation 2011–2012 on page 4 of the Data Sheet.

6	Max earned £4108 per month and had a tax-free allowance of £7475.
	Calculate:
6 (a)	Max's taxable income;
	Answer
	(3 marks)
6 (b)	the amount of income tax which Max paid in the year.
	Answer
	(5 marks)



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Section F

Answer all questions in the spaces provided.

7	The annual rate, R , expressed as a decimal, at which a principal, £ P , would increase
	to an amount, $\pounds A$, in n years is given by the formula

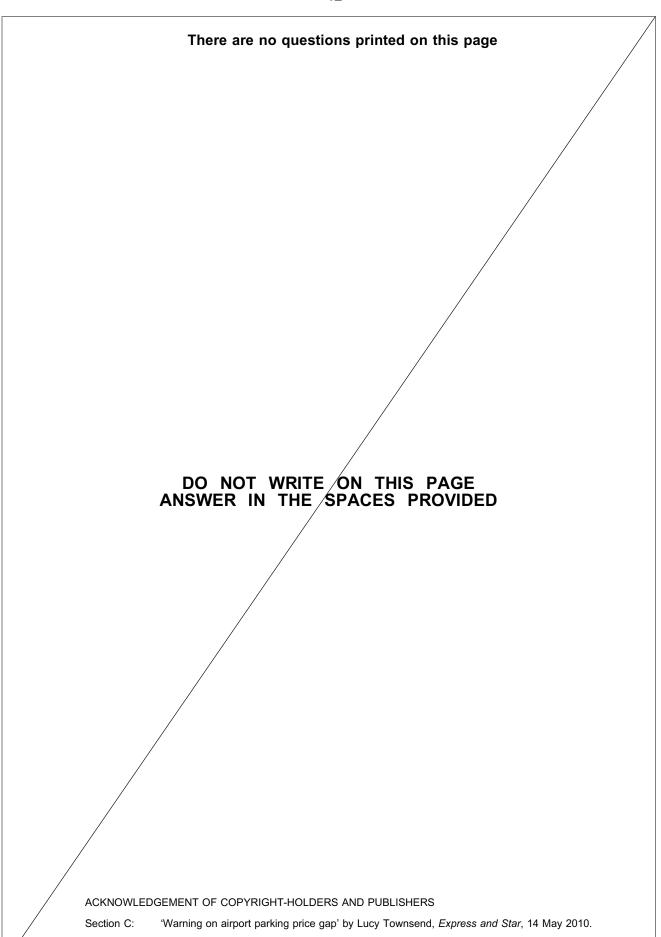
$$R = \sqrt[n]{\frac{A}{P}} - 1$$

, -
An investment of £3500 has grown to £4506 in four years. Find the annual rate of interest on this investment, expressed as a percentage.
Answer(3 marks)
A shopkeeper reduces all his original prices by 70% for a sale. At the end of the sale, the shopkeeper has a final clearance day when all the sale prices are reduced by a further 20% of the sale price. Emma buys an article at the final clearance day price. What percentage of the original price does she pay?
Answer(4 marks)
$(\tau marks)$

END OF QUESTIONS



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