

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5	
6	
7	
8	
TOTAL	



Free-Standing Mathematics Qualification
Higher Level
June 2015

Financial Calculations

4984

Unit 4

Thursday 21 May 2015 9.00 am to 10.15 am

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • 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.



J U N 1 5 4 9 8 4 0 1

Section A

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Fortress Finance** on page 2 of the Data Sheet.

1 Alfie is going to university. He decides to borrow £500 to buy a laptop. He will repay the loan over 36 months.

Fortress Finance agrees to loan him the £500. They tell him that his repayments will be £16.10 per month.

1 (a) By finding the total repayments which Alfie makes to repay the loan, calculate the total interest which he will be charged for borrowing this money.

[3 marks]

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Answer

1 (b) Express the total interest which Alfie will be charged for borrowing this money as a percentage of the amount borrowed.

[2 marks]

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Answer



1 (c) A formula which may be used to work out the APR charged when money is borrowed and repaid monthly is

$$APR = \frac{24T}{A(n + 1)} \times 100$$

where T is the total interest charged,
 A is the amount borrowed and
 n is the total number of repayments to be made.

Use this formula to find the APR which Alfie is charged.

[3 marks]

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Answer

8

Turn over for the next question

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Section B

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Holiday costs** on page 2 of the Data Sheet.

2 (a)

	A	B	C	D	E
1		Total cost for group of four adults	Total cost for family of two adults and two children	Extra cost for family group	Extra cost as a percentage of total cost for four adults
2	Apartments Dunas Club, Fuerteventura	£1816	£2060		
3	Mirador del Atlantico, Playa Amadores, Gran Canaria	£1736	£1932		
4	Vista Blanes Apartments, Cala 'n Blanes, Menorca	£1852	£2025		
5	Sunset Village Altinkum, Bodrum, Turkey	£1476	£1611		

Prices were correct for departures on 3 August 2013.

Complete the spreadsheet to give:

2 (a) (i) the extra cost for the family compared to the group of four adults;

[1 mark]

2 (a) (ii) the extra cost as a percentage of the total cost for four adults.

Give the percentages to one decimal place.

[4 marks]

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- 2 (b)** Which holiday had the largest percentage increase in cost for the family rather than the group of four adults?

Put a tick (✓) against the one correct answer.

[1 mark]

Apartments Dunas Club, Fuerteventura	
Mirador del Atlantico, Playa Amadores, Gran Canaria	
Vista Blanes Apartments, Cala 'n Blanes, Menorca	
Sunset Village Altinkum, Bodrum, Turkey	

6

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Section C

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Company benefits** on page 3 of the Data Sheet.

3 The company sends the best three sales representatives to Spain.

3 (a) One of the representatives goes to a waterpark and is charged €42 .
The exchange rate is €1.17 to £1 .

Calculate this cost in pounds.

[3 marks]

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Answer

3 (b) The three representatives go out to dinner and agree that the total cost of €66 will be divided between them in the ratio 3:4:5 .

How much is paid by the person who pays the most?

[3 marks]

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Answer



3 (c) The holiday costs the company £546 for **each** representative.

The total cost for three people is 84% of the total cost for four people.

How much extra would the company have paid if it had sent the best four sales representatives instead of three?

[5 marks]

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Answer

11

Turn over for the next question

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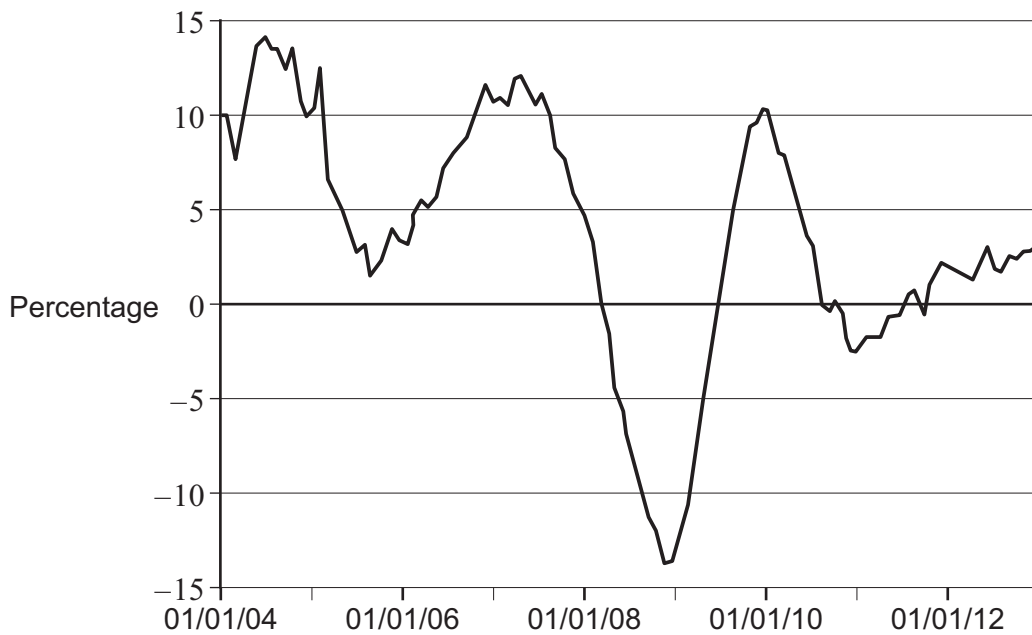
Section D

Answer **all** questions.

Answer each question in the space provided for that question.

Use **House prices** on page 3 of the Data Sheet.

- 4** The Office for National Statistics (ONS) produced the graph below to show the annual percentage increase in house prices from 2004 to 2013.



- 4 (a)** State when the annual percentage increase in house prices was the greatest. **[1 mark]**

Answer

- 4 (b)** On 1 January 2008, Chloe bought a house for £142 000 .
The graph shows that on 1 January 2009, the annual percentage increase in house prices was -13% .

Calculate the expected price of Chloe's house on 1 January 2009. **[2 marks]**

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Answer



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ANSWER IN THE SPACES PROVIDED**

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Section E

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Mortgages** on page 4 of the Data Sheet.

5 (a) Paul and Julie take out a mortgage of £90 000 repayable over 25 years. The monthly repayment will be £431 .

5 (a) (i) If they pay £200 per month more than £431 , Paul and Julie would repay the mortgage in 14 years.

How much would they repay in total?

[2 marks]

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Answer

5 (a) (ii) If Paul and Julie decide to pay only £60 per month more than £431 , their total repayment would be £114 894 .

How long, in years and months, would they take to pay off their mortgage by making this extra repayment of £60 per month?

[3 marks]

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Answer

5 (b) The total repayment for the whole of a mortgage is much less when the number of years of the mortgage is less.

Why would a person take out a mortgage over a long period of time?

[1 mark]

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6 (a) There is normally a one-off fee to set up a mortgage. This fee may be added to the mortgage.

Assume that the interest rate does not change during the life of the mortgage.

6 (a) (i) In what circumstances would it be sensible to select a mortgage which has a high fee but has a relatively low interest rate?

[1 mark]

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6 (a) (ii) In what circumstances would it be sensible to select a mortgage which has no fee but has a relatively high interest rate?

[1 mark]

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6 (b) Kathy says she pays about £930 every month for her mortgage. This amount is correct to the nearest ten pounds.

What is the maximum possible amount of this monthly payment?

[2 marks]

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Answer

4

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Section F

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Taxation 2014–2015** on page 4 of the Data Sheet.

7 Nikita earned £4075 per month and had a tax-free allowance of £10 000 .

7 (a) Calculate Nikita's taxable income.

[3 marks]

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Answer

7 (b) Calculate the amount of income tax which Nikita paid in the year.

[5 marks]

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Answer

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Section G

Answer **all** questions.

Answer each question in the space provided for that question.

8

A shop starts its annual sale with an initial percentage reduction in all its prices. On the last day of the sale, the shop reduces all its prices by a further 20%. This means that all its goods have been reduced in price by 76%.

What was the initial percentage reduction made by the shop?

[4 marks]

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Answer

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END OF QUESTIONS



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