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| For Examiner's Use |
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Free-Standing Mathematics Qualification
 June 2008
 Intermediate Level



CALCULATING FINANCES
Unit 4

6984/2

Tuesday 13 May 2008 9.00 am to 10.15 am

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|---|
| <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. |
|---|

| For Examiner's Use | | | |
|---------------------|------|----------|------|
| Question | Mark | Question | Mark |
| 1 | | 9 | |
| 2 | | 10 | |
| 3 | | 11 | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| Total (Column 1) → | | | |
| Total (Column 2) → | | | |
| TOTAL | | | |
| Examiner's Initials | | | |

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. Answers written in margins or on blank pages will not be marked.
- Do all rough work in this book. Cross through any work 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 maximum mark for this paper is 50.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.

Advice

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



SECTION A

Answer **all** questions in the spaces provided.

Use **Premier Personal Finance** on page 2 of the Data Sheet.

1 Christopher decides to borrow £ 5000 to buy a car and to repay the loan over 48 months.

1 (a) Write down the monthly repayment Christopher will make.

.....

Answer.....

(1 mark)

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

.....

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Answer.....

(3 marks)

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

.....

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Answer.....

(2 marks)

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| 6 |
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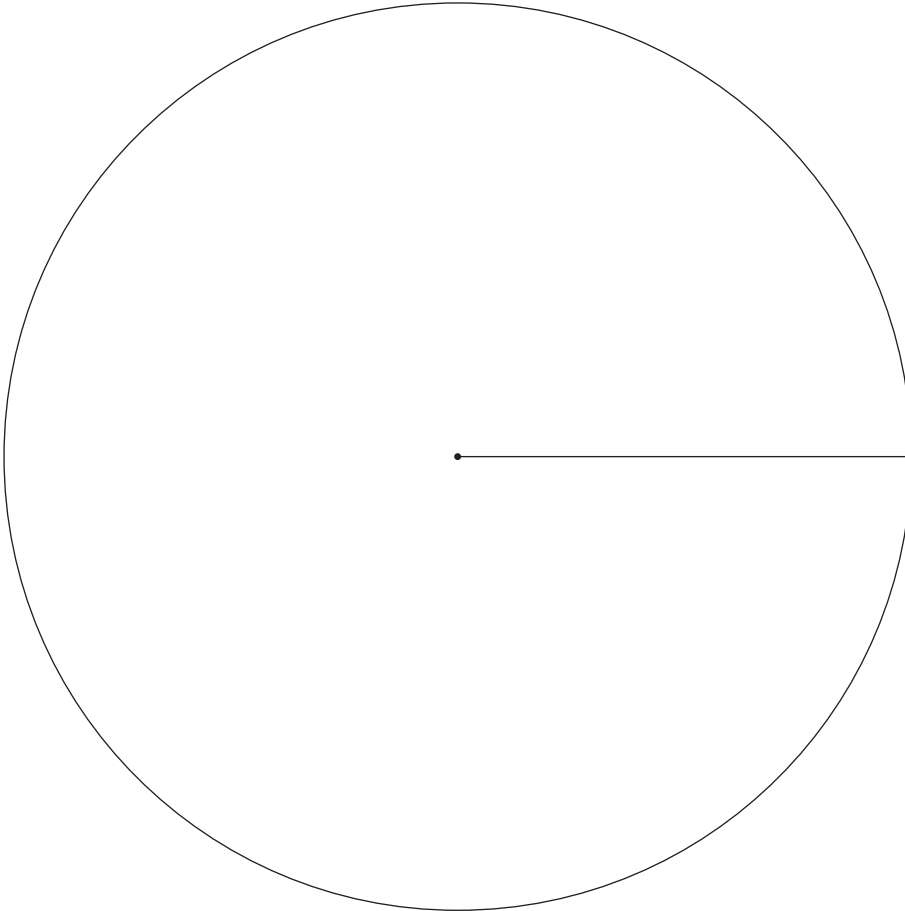


SECTION B

Answer **all** questions in the spaces provided.

Use **Household expenditure** on page 2 of the Data Sheet.

- 2 Complete the pie chart below to show the typical monthly outgoings for a family with two children.



Space for working

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(5 marks)

5

Turn over ►



3 Jabron’s mobile phone costs him £30 per month and his landline phone costs him £36 per month.

Express the cost of his mobile phone as a fraction of the total amount which Jabron spends per month on his two phones.
Give your fraction in its lowest terms.

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Answer..... (3 marks)

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| 3 |

4 Greg and Wendy spend £120 per month on their council tax.
They decide to divide this cost in the ratio 2 : 3, with Wendy paying the most.

How much does Wendy pay?

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Answer..... (3 marks)

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| 3 |

5 A family spent £261 per month on gas/electricity/water/phone and council tax.
The family spent 24.2% of this £261 on gas and electricity.

Calculate the monthly amount spent on gas and electricity by this family.

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Answer..... (2 marks)

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SECTION C

Answer **all** questions in the spaces provided.

Use **Parking tickets** on page 3 of the Data Sheet.

- 6 A spreadsheet is used to calculate the percentage profit made by some local authorities when issuing parking tickets.

| | A | B | C | D | E |
|---|------------------------|--|------------------------------------|-----------------------|---|
| 1 | Local Authority | Income from parking tickets (£000s) | Cost of contractors (£000s) | Profit (£000s) | Profit as a percentage of income |
| 2 | London: Camden | 42 929 | 21 722 | | |
| 3 | London: Ealing | 15 111 | 14 225 | | |
| 4 | London: Westminster | 131 325 | 87 780 | | |
| 5 | Birmingham | 17 725 | 11 011 | | |
| 6 | Cambridge | 10 551 | 7 125 | | |
| 7 | Leeds | 8 185 | 3 002 | | |

- 6 (a) Complete the spreadsheet to give the annual profit made from issuing parking tickets by the local authorities listed.
Give also the profit made as a percentage of the annual income from parking tickets.
Give your percentages to the nearest integer.

(5 marks)

Space for working

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- 6 (b) State a formula which would give the content of cell E4.

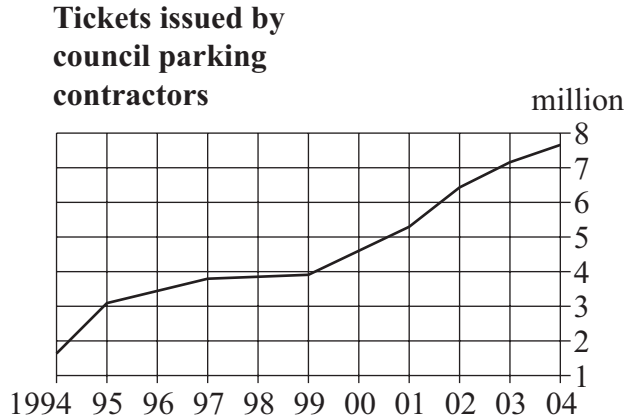
.....

Answer.....

(1 mark)



7 The graph below shows the number of parking tickets issued by council parking contractors in the period 1994–2004.



7 (a) During which period was there the greatest increase in the number of parking tickets issued?

State how you would recognise this from the graph.

Answer

Reason

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(3 marks)

7 (b) In which year was the greatest number of tickets issued?

Use the graph to estimate the number of tickets issued in that year.

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Answer.....

Number of tickets

(2 marks)

5



SECTION D

Answer **all** questions in the spaces provided.

Use **Taxation 2007–2008** on page 4 of the Data Sheet.

8 Patrick earned £ 4730 per month and had a tax free allowance of £ 5225.

Calculate:

8 (a) Patrick’s taxable income;

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Answer.....
(3 marks)

8 (b) the amount of income tax which Patrick paid in the year.

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Answer.....
(5 marks)

8

Turn over for the next question

Turn over ►



SECTION E

Answer **all** questions in the spaces provided.

9 A television picture is made up of a large number of ‘pixels’.

A high definition TV (HDTV) produces a sharper image than an older TV because it uses a larger number of pixels.

The number of lines on a HDTV is 1080 and the number of pixels per line is 1920.

9 (a) The total number of pixels that make up the television picture is obtained by multiplying these two numbers together.

Using approximations, which must be shown, estimate the total number of pixels in a HDTV.

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Answer.....
(3 marks)

9 (b) In 2006, the cost of a typical HDTV was £ 799.99.

Using approximations, how many pixels are obtained for each pound spent?

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Answer.....
(2 marks)

5



10 A shopkeeper normally sells clothes at a price that includes a mark-up of 60% for profit. She decides to reduce all her prices in a sale but still wishes to make 20% profit on all the clothes.

By what percentage of the normal selling price should the shopkeeper reduce the prices of the clothes to be sold in the sale?

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Answer.....
(4 marks)

4

11 The formula

$$A = P(1 + R)^n$$

may be used to find the amount accruing when a principal £ P earns compound interest at the annual rate R for a year.

For this formula, the rate R must be expressed as a decimal.

Nicole invests £4000 at the annual rate of 3.6%, paid compound annually. She leaves the investment for 5 years.

Calculate the amount in Nicole's account after these five years.

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Answer.....
(3 marks)

3

END OF QUESTIONS



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