

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8 - 9	
10 - 11	
12 - 13	
TOTAL	



General Certificate of Secondary Education
Foundation Tier
March 2011

Mathematics

43601F

Unit 1

Monday 7 March 2011 9.00 am to 10.00 am

F

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments. 	
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Time allowed

- 1 hour

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- 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 or on blank pages.
- Do all rough work in this book.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 54.
- The quality of your written communication is specifically assessed in Questions 7 and 9. These questions are indicated with an asterisk (*)
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

Advice

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



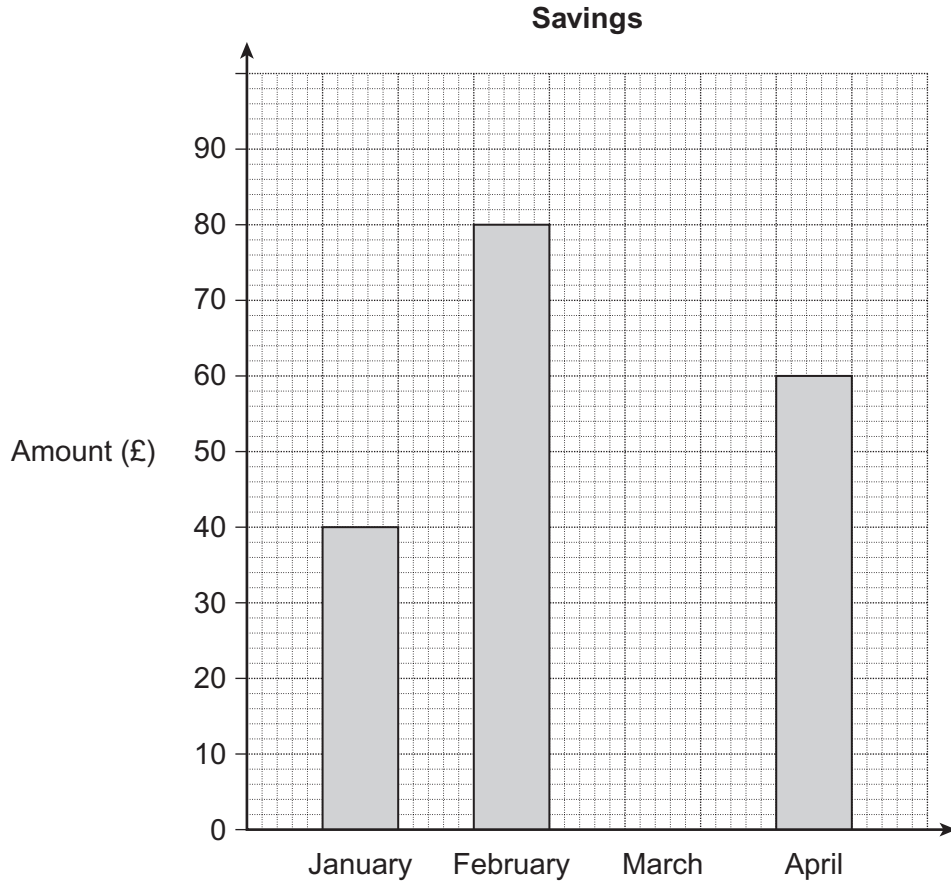
M A R 1 1 4 3 6 0 1 F 0 1

WMP/Mar11/43601F

43601F

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

1 (a) The bar chart shows the amounts Callum saves in January, February and April 2010.



1 (a) (i) How much does he save in January 2010?

Answer £ (1 mark)

1 (a) (ii) From January to April he saves £250 in total.

Complete the bar chart by drawing the bar for March.

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(3 marks)



1 (b) The pictogram shows the amounts Callum saves in the next four months.

Key:

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 represents £20

May	<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		
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August	<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td></tr></table>		

Work out the range of the amount he saves in these four months. You **must** show your working.

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.....

Answer £ (2 marks)

1 (c) (i) For the rest of 2010 Callum saves £50 each month.

How much does he save in 2010 in total?

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.....

Answer £ (3 marks)

1 (c) (ii) Callum spends 50% of these total savings to pay for a holiday.

How much does he pay for the holiday?

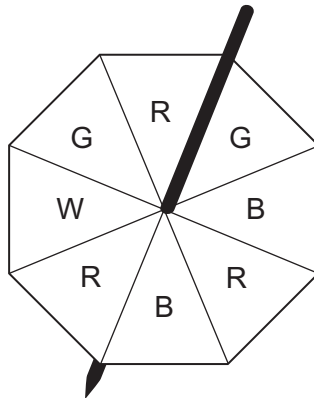
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Answer £ (2 marks)



- 2 (a)** Fair spinner X has eight equal sections.
The sections are either red (R), blue (B), green (G) or white (W).

Spinner X



- 2 (a) (i)** The spinner is spun.
On which colour is it least likely to land?

Answer (1 mark)

- 2 (a) (ii)** Write down the probability that the spinner lands on green.
Give your answer in its simplest form.

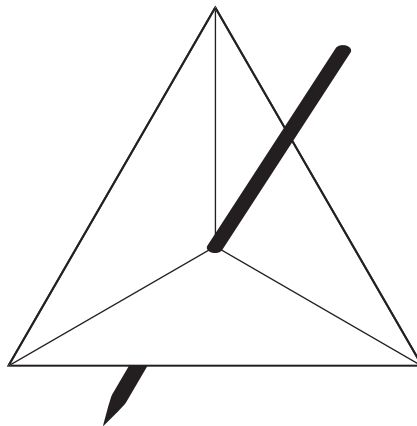
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Answer (2 marks)

- 2 (b)** Fair spinner Y has three equal sections.
It is certain to land on red (R).

Label spinner Y.

Spinner Y



(1 mark)

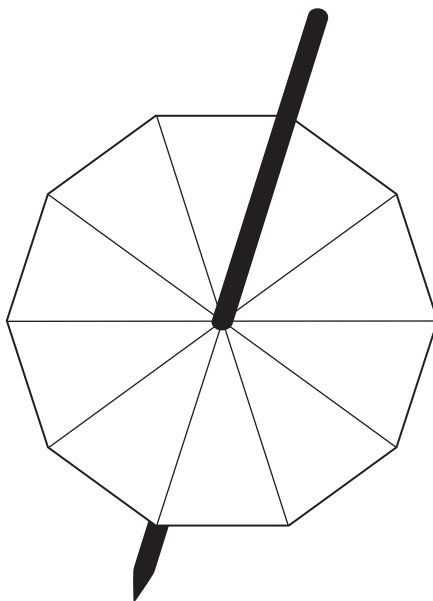


2 (c) Fair spinner Z has 10 equal sections.

Label spinner Z so that

it has the same four colours as spinner X
white is less likely than on spinner X
white and green are equally likely on spinner Z
red and blue are equally likely on spinner Z.

Spinner Z



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(2 marks)



3 There are three types of Easter eggs.

- Milk chocolate M
- Dark chocolate D
- White chocolate W

The eggs come in three sizes.

- Small S
- Large L
- King size K

3 (a) List **all** possible combinations of chocolate type and size.
The first one has been done for you.

MS

.....

.....

.....

(3 marks)

3 (b) A box contains equal numbers of each egg.
One egg is chosen at random.

What is the probability that a small milk chocolate egg is chosen?

Answer (1 mark)



4 Shola has **two** of these coins.

1p 2p 5p 10p 20p 50p £1

The value of one coin is 10% of the value of the other coin.

Work out the possible **total** amounts of money Shola could have.

.....
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Answer

(3 marks)

Turn over for the next question



5 A car park is open from 9 am to 6 pm.

5 (a) (i) 80 cars enter between 9 am and 10 am.
One-quarter of these cars are silver.

How many silver cars enter between 9 am and 10 am?

.....

Answer (1 mark)

5 (a) (ii) 115 cars enter between 10 am and 11 am.
Kim says, "Exactly one-quarter of these cars are silver."

Show that she is wrong.

.....

..... (1 mark)

5 (b) A data logging machine counts cars entering and leaving the car park.

Hour ending at	Cars entering	Cars leaving
10 am	80	5
11 am	115	25
12 noon	75	40
1 pm	35	35
2 pm	50	50
3 pm	40	45
4 pm	20	65
5 pm	10	115
6 pm	5	30

5 (b) (i) The car park is empty at 9 am.
How many cars are in the car park at 10 am?

.....

Answer (1 mark)

5 (b) (ii) Barriers stop cars entering when the car park is full.
The car park is full at 12 noon.

How many cars are in the car park when it is full?

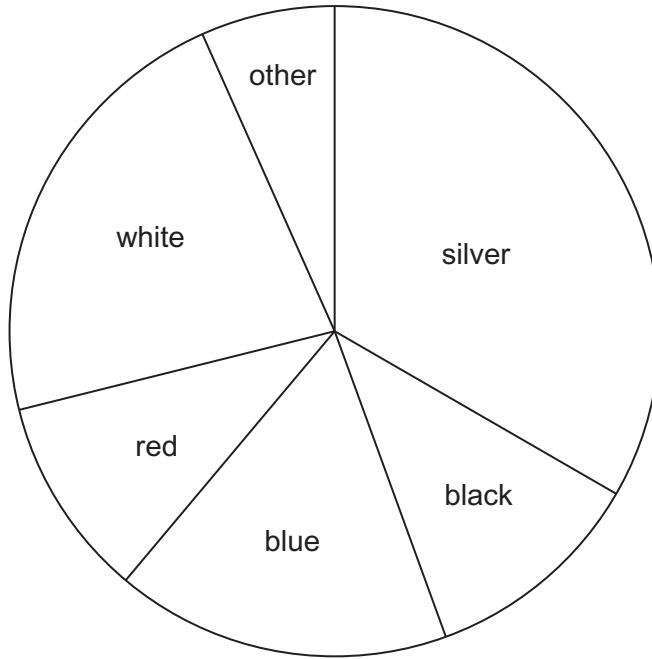
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Answer (3 marks)



5 (c) The pie chart shows information about the colours of the cars in the car park one day.



Complete the sentences.

5 (c) (i) There are twice as many cars as black cars. (1 mark)

5 (c) (ii) $\frac{1}{3}$ of the cars are (1 mark)

5 (d) Are there any purple cars in the car park on that day?
Tick a box.

Yes

No

Cannot tell

Give a reason for your answer.

.....

.....

(1 mark)



6 Is money discrete or continuous?
Tick a box.

Discrete

Continuous

Give a reason for your answer.

.....

.....

(1 mark)

***7** A company pays people to visit shops and test customer service.
Paul works for this company.

His fees in October are shown.

Fee (£)	Frequency
8	10
10	18
12	7
15	4
20	1

7 (a) Calculate his mean fee.

.....

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Answer £ (3 marks)

7 (b) Paul says that his modal fee and his median fee are both £10.

Is he correct?

Give reasons and working to show how you decide.

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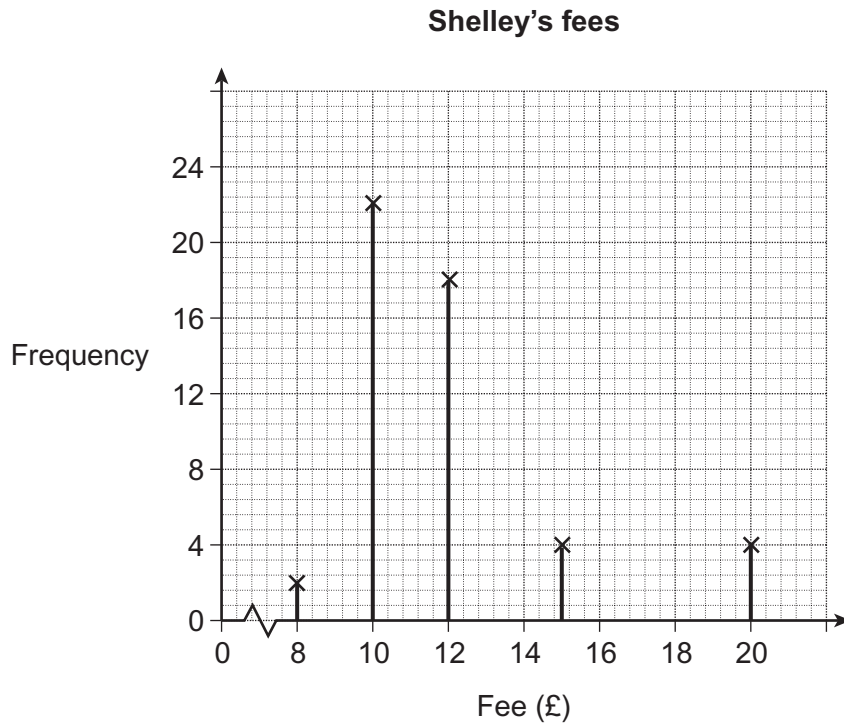
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(2 marks)



7 (c) Shelley also works for this company.
Her fees in the same month are shown.



Give **one** similarity and **one** difference in the fees of Paul and Shelley.

Similarity

.....

Difference

.....

(2 marks)

8 120 adults complete a survey.
45 are men.

Write the ratio men : women in its simplest form.

.....

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Answer (2 marks)



***9** Each day 147 trains leave Lea Road station.
One day, most trains are on time (0 minutes late).
19 trains are late.

9 (a) What percentage of trains are late?
Give your answer to 1 decimal place.

.....
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Answer % (3 marks)

9 (b) The station manager records the number of minutes late for each of the 19 trains.

6 11 1 21 8 10 17 4 35 22
2 3 41 8 23 7 16 28 19

9 (b) (i) Draw an ordered stem-and-leaf diagram to show the data for the late trains.
Complete the key.

Key: | represents minutes late

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(4 marks)



9 (b) (ii) For the 19 late trains, write down the modal number of minutes late.

Answer minutes (1 mark)

9 (b) (iii) Write down the modal number of minutes late for all 147 trains.

Answer minutes (1 mark)

9 (c) The station manager says,
“The late times are all one minute less than I recorded.
For example, the train I recorded as 6 minutes late was actually only 5 minutes late.”

Which modal number of minutes late changes?
Tick a box.

The 19 late trains

All 147 trains

Both

Neither

Give a reason for your answer.

.....
.....

(2 marks)

END OF QUESTIONS



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