AQA

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

F

Foundation Tier Unit 1 Statistics and Number

Wednesday 4 November 2015 Morning Time allowed: 1 hour

Materials

For this paper you must have:
- a calculator
- mathematical instruments.

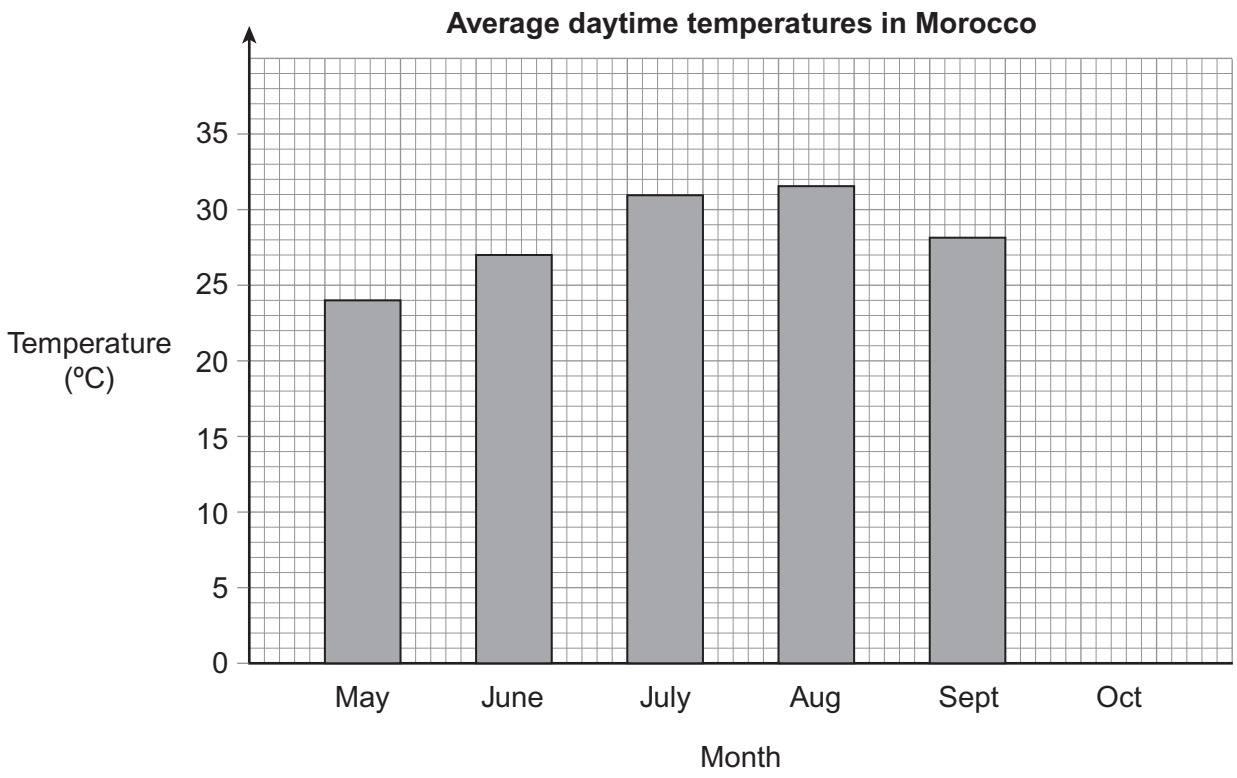
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

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 2, 3 and 14. 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 book.

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

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

1



1 (a) Write down the **lowest** average daytime temperature shown in the bar chart.

[1 mark]

Answer ..... º C

1 (b) The average daytime temperature in Morocco in October is 25ºC

Complete the bar chart.

[1 mark]

1 (c) Which **two** months have an average daytime temperature between 26ºC and 30ºC?

[2 marks]

Answer ..... and .....

1 (d) In July, the average temperature at night in Morocco is 19ºC

How much **lower** is this than the average daytime temperature in Morocco in July?

[2 marks]

.....

Answer ..... ºC

2 50 raffle tickets are sold for 25p each.
The winning ticket is picked at random.

Linda buys 14 tickets.

***2 (a)** She pays with a £10 note.

How much change should she get?

[3 marks]

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Answer £ .....

2 (b) Write down the probability that Linda buys the winning ticket.

[1 mark]

Answer .....

2 (c) Work out the probability that Linda does **not** buy the winning ticket.

[1 mark]

.....

Answer .....

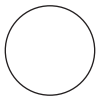
11

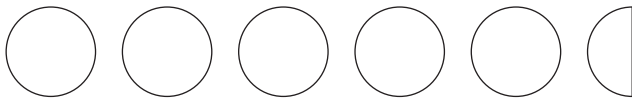
***3** The table shows the number of people going into a gym on one day.

Time	07:00 – 09:59	10:00 – 12:59	13:00 – 15:59	16:00 – 18:59	19:00 – 21:59
Number of people	11	1	4	6	9

Complete the pictogram.

[3 marks]

Key:  represents 2 people

Time	**Number of people**
07:00 – 09:59	
10:00 – 12:59	
13:00 – 15:59	
16:00 – 18:59	
19:00 – 21:59	

4 The table shows some information about car hire.

Car	Maximum number of people	Cost per day (£)
Small	4	16.71
Medium	5	17.31
Large	5	28.35

Extras

Insurance	£7.50 per day
Baby seat	£39.60 per week

Tracey wants to hire a car
for 5 people
for 7 days
with insurance
and a baby seat.

Work out the cheapest total cost.

[4 marks]

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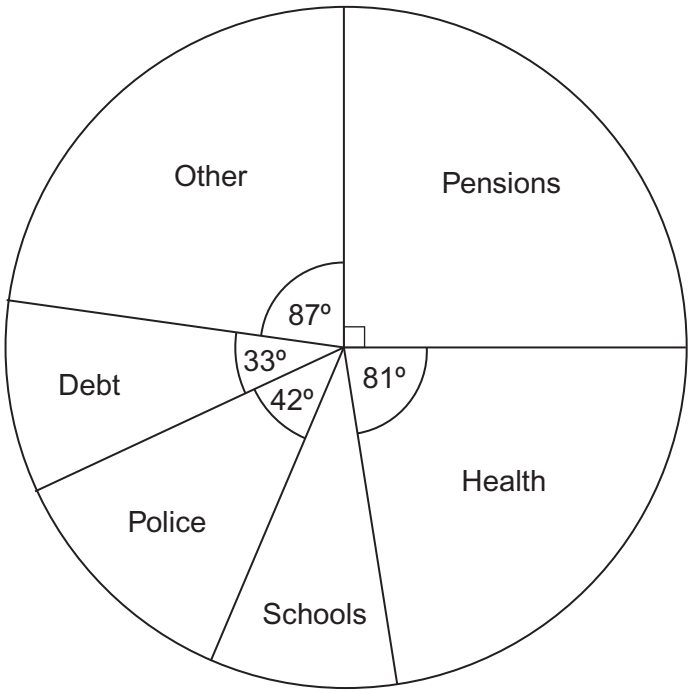
Answer £ .....

7

5

Government spending



Not drawn accurately

5 (a) What percentage of spending was on Pensions?
Circle your answer.

[1 mark]

14% 25% 50% 90%

5 (b) Calculate the angle of the sector for Schools.

[2 marks]

.....

Answer ..... degrees

5 (c) Work out the ratio of spending Health : Police
Give your answer in its simplest form.

[2 marks]

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Answer ..... : .....

6 The heights of 20 men and 20 women were measured.
The ordered stem-and-leaf diagrams show the results.

Key: 17 | 2 represents 172 cm

Men

15	7					
16	1	1	1			
17	2	4	6	6		
18	1	3	3	5	7	8
19	2	2	4	5		
20	3	5				

Women

15	3	4	6	7	7	9	
16	0	0	0	2	4	5	7
17	2	5	5	6			
18	1	3	4				

6 (a) For the **men**, which average is 161 cm?
Circle your answer.

[1 mark]

median mode mean

6 (b) Work out the median height of the **women**.

[1 mark]

.....

Answer ..... cm

6 (c) Calculate the range of **all** 40 heights.

[2 marks]

.....

Answer ..... cm

9

7 40 students have brown, blue or green eyes.

Half of the students with brown eyes are boys.
There are 6 more girls than boys altogether.

7 (a) Complete the table

[4 marks]

	Boys	**Girls**	**Total**
Brown			18
Blue	3		
Green		2	
Total			40

7 (b) What percentage of the students have brown eyes?

[2 marks]

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Answer ..... %

8 (a) An ordinary, fair dice is rolled 420 times.

How many times is the number 3 expected?

[2 marks]

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Answer .....

8 (b) A biased dice is rolled 50 times.
The number 5 appears 23 times.

Which of the following give the relative frequency of the number 5?
Circle **all** the correct answers.

[2 marks]

23%	$\frac{23}{50}$	0.23	0.46	$\frac{5}{23}$	46%

Turn over for the next question

10

9 Each question in a test has 1, 2, 3 or 4 marks as shown.

Number of marks	Number of questions	
1	7	
2	10	
3	4	
4	3	

9 (a) Show that there are 24 questions.

[1 mark]

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9 (b) Work out the mean number of marks per question.

[3 marks]

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Answer .....

9 (c) An extra question is added to the test.
The mean number of marks per question is now 2.2

How many marks does the extra question have?

[2 marks]

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Answer .....

10 Ben wants to find out which type of music people prefer.
He surveys 10 boys in his class.

Write down **one** way that Ben can improve his survey.

[1 mark]

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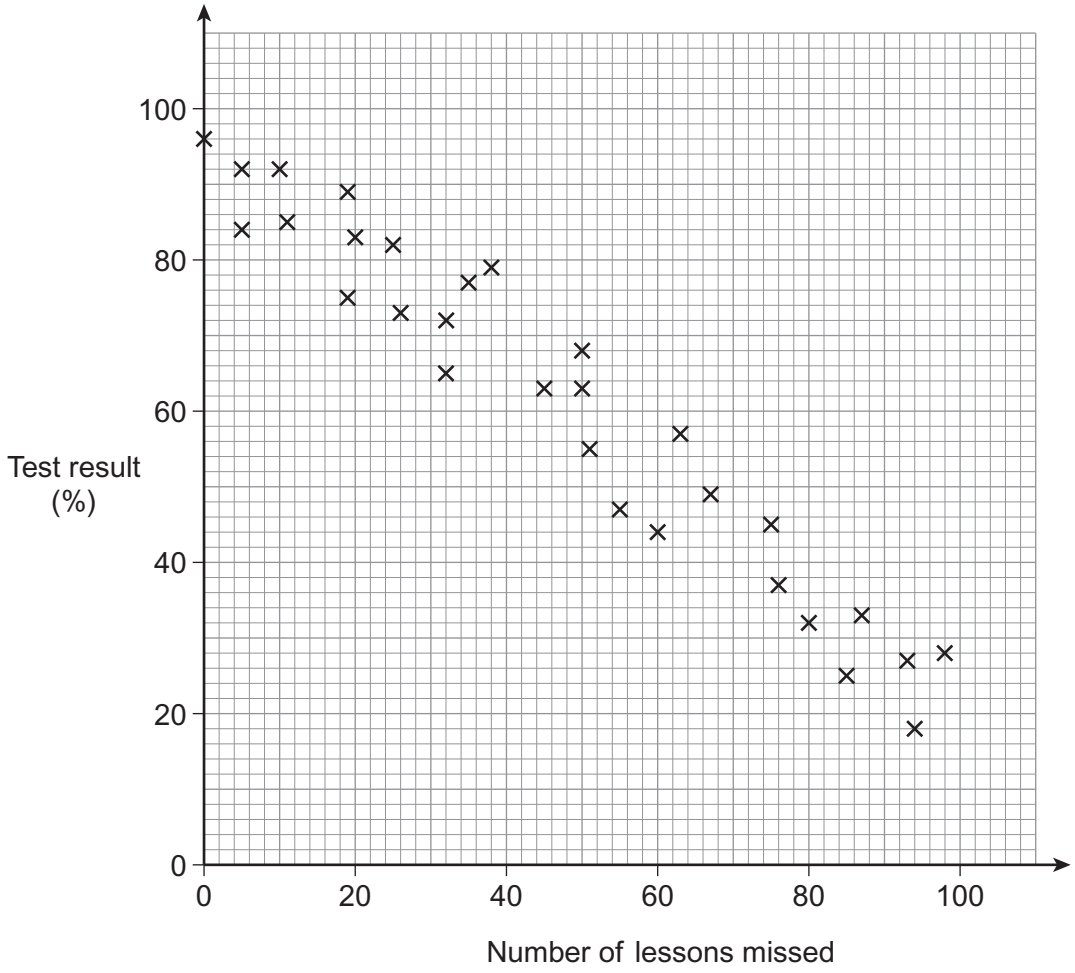
Turn over for the next question

7

11 A teacher recorded the number of lessons missed by 30 students.
She compared the number of lessons they missed with their results in a test.



11 (a) What type of correlation is shown?

[1 mark]

Answer .....

11 (b) Draw a line of best fit on the graph.

[1 mark]

11 (c) Another student missed 40 lessons.

Use your line of best fit to estimate her test result.

[1 mark]

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Answer ..... %

12 There are 20 coloured balls in a bag.

The probability of choosing a red ball at random is $\frac{1}{4}$

One more red ball is added.

Work out the **new** probability of choosing a red ball.

[2 marks]

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Answer .....

Turn over for the next question

5

13 Three positive whole numbers have a mean of 6

What is the greatest possible range of the three numbers?

[3 marks]

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Answer .....

***14** Two boxes contain a mix of apples and oranges.

In box A, the ratio of apples to oranges is 5 : 7

In box B, $\frac{2}{5}$ of the fruit are apples.

A piece of fruit is chosen at random from each box.

Is there a greater probability of choosing an apple from box A or box B?
You **must** show your working.

[2 marks]

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END OF QUESTIONS

5

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED