AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
MATHEMATICS (LINEAR)

F

Foundation Tier Paper 1

Thursday 26 May 2016 Morning Time allowed: 1 hour 15 minutes

Materials

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.

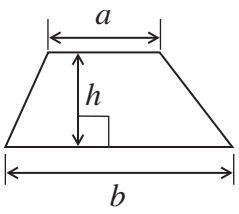
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 70.
- The quality of your written communication is specifically assessed in Questions 10 and 12. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, tracing paper and graph paper. These must be tagged securely to this answer book.

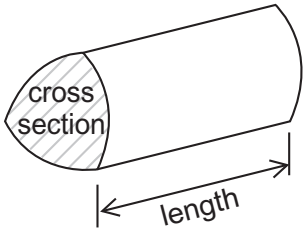
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2}(a+b)h$

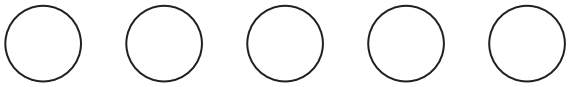
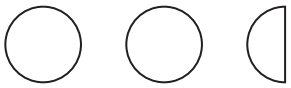
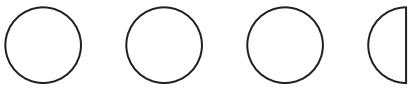


Volume of prism = area of cross section × length



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

1 60 people were asked the colour of their car.
The pictogram shows the results.
The information for Silver is missing.

		Frequency
Red		20
Black		
Silver		
Blue		

Key  Represents_____cars

1 (a) 20 cars are Red.

Complete the key.

[1 mark]

1 (b) Complete the pictogram and the frequency column.

[3 marks]

4

Turn over ▶

2 Here is part of the menu in a café.

Drinks	
Tea	£1.20
Coffee	£1.60
Cola	£1.50

Snacks	
Biscuit	65p
Scone	£1.00
Donut	95p

2 (a) Martyn buys one drink and one snack.
He pays **less** than £2

What drink and snack did he buy?

[1 mark]

Answer _____ and _____

2 (b) Sue buys two teas, one biscuit and one scone.
She pays with a £5 note.
She gets 4 coins in her change.

Work out the coins that she gets.

[3 marks]

Answer _____ , _____ , _____ , _____

2 (c) The café has a breakfast deal.

Breakfast deal
Coffee and muffin
Only £2.25

The breakfast deal is 50p cheaper than the normal price.

Work out the normal price of a muffin.

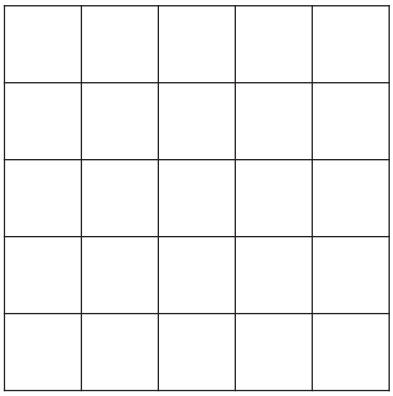
[3 marks]

Answer £ _____

Turn over for the next question

7

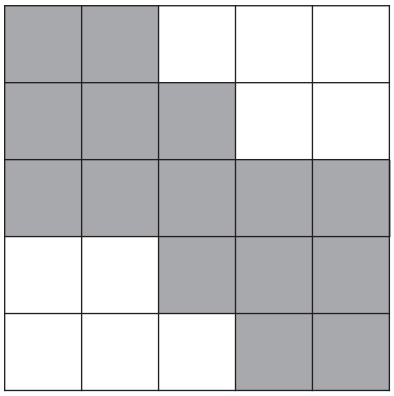
3 (a) Here is a square grid.



Shade 40% of the grid.

[1 mark]

3 (b) Here is another square grid.



What fraction of this grid is shaded?
Give your answer in its simplest form.

[2 marks]

Answer _____

4 (a) Work out 383 + 419

[1 mark]

Answer _____

4 (b) Work out 522 ÷ 6

[1 mark]

Answer _____

4 (c) Work out 52×36

[3 marks]

Answer _____

8

5 (a) Work out the value of $7a - 4b$ when $a = 3$ and $b = -2$

[2 marks]

Answer _____

5 (b) Solve $8x = 96$

[1 mark]

$x =$ _____

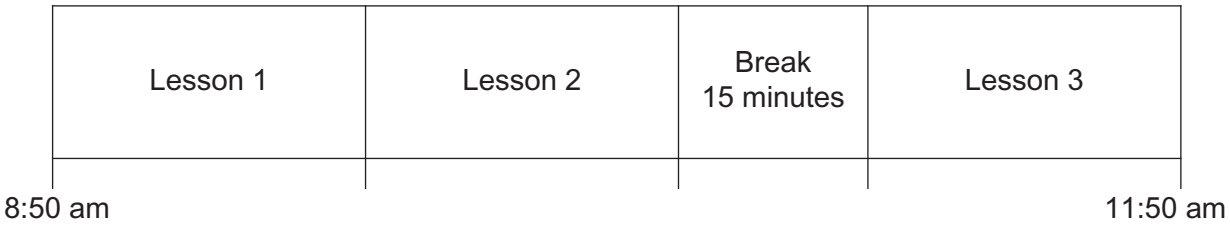
5 (c) Solve $y + 12 = 28$

[1 mark]

$y =$ _____

6 Here is a school timetable for one morning.

Not drawn accurately



Each lesson is the same length.
Between lessons 2 and 3 there is a 15 minute break.

Work out the length of one lesson.

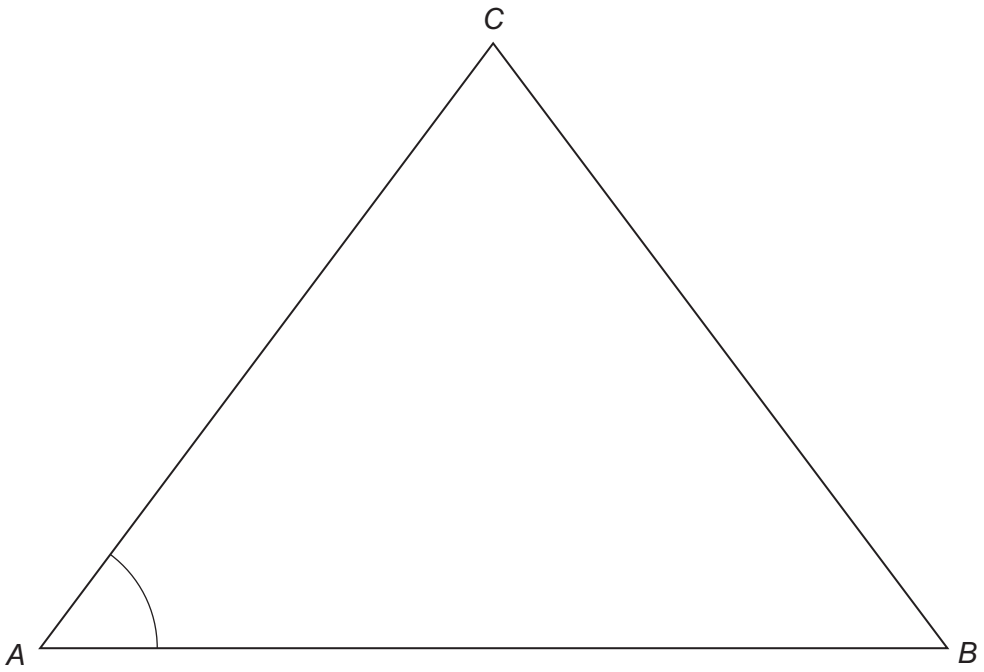
[3 marks]

Answer _____ minutes

Turn over for the next question

7

7 Here is triangle *ABC*.
It is drawn accurately.



7 (a) Measure angle *CAB*.

[1 mark]

Answer _____ degrees

7 (b) Work out the area of the triangle.
Show clearly any measurements that you make.

[3 marks]

_____

_____

_____

Answer _____ cm^2

8 (a) Circle the expression that is the same as six less than x.

[1 mark]

$6 - x$ $\quad 6x$ $\quad \frac{x}{6}$ $\quad x - 6$

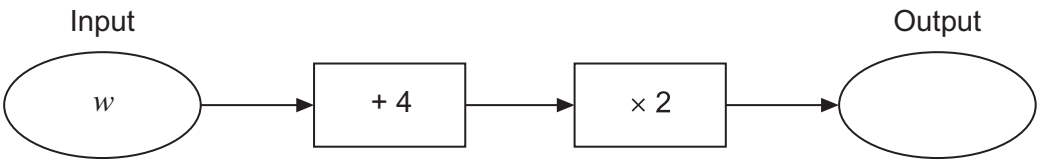
8 (b) Circle the expression that is the same as one-quarter of y.

[1 mark]

$y \div 0.4$ $\quad \frac{4}{y}$ $\quad \frac{y}{4}$ $\quad 4y$

8 (c) Write the output of this number machine as an expression.

[1 mark]



Answer _____

7

9 (a) Work out $\frac{7}{10} - \frac{2}{5}$

[2 marks]

Answer _____

9 (b) Work out $\frac{2}{3}$ of 36

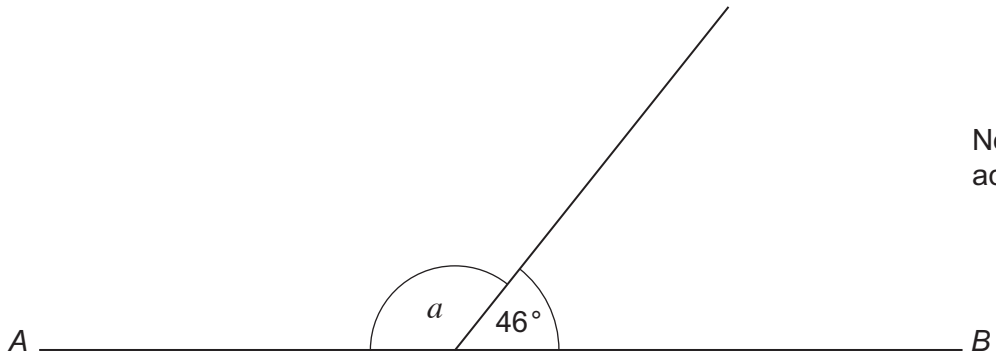
[1 mark]

Answer _____

***10** *AB* is a straight line.

Work out the size of angle a.
Give a reason for your answer.

[2 marks]



Not drawn accurately

Answer _____ degrees

Reason _____

_____

Turn over for the next question

5

11 (a) How many pounds are in 1 kilogram?
Circle the closest estimate.

[1 mark]

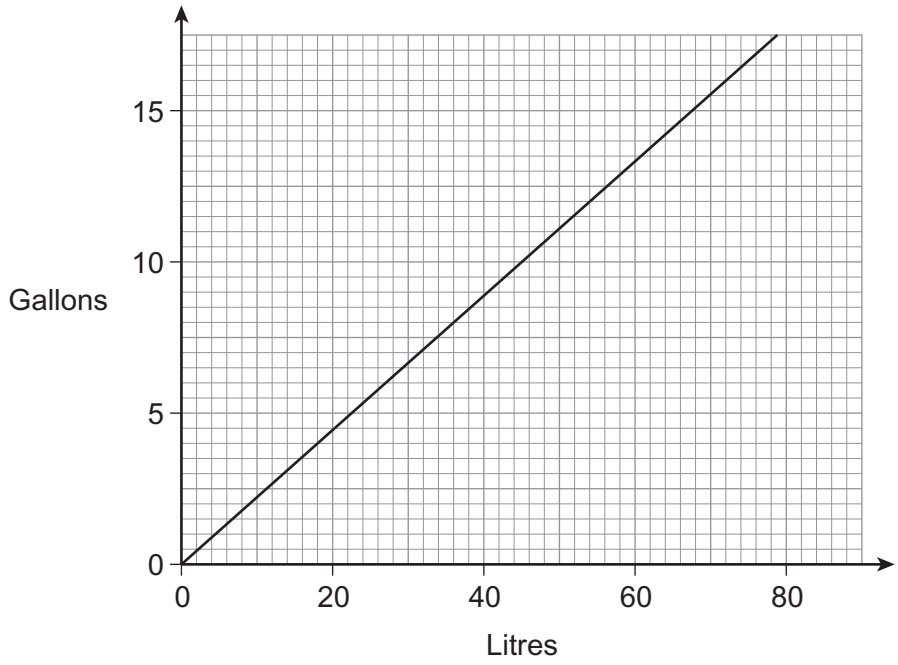
1.6 2.2 2.5 4.5

11 (b) How many kilometres are in 1 mile?
Circle the closest estimate.

[1 mark]

0.625 1.6 2.5 5

11 (c) Here is a conversion graph.



Convert 30 gallons to litres.

[2 marks]

Answer _____ litres

***12** Increase £190 by 35%

[3 marks]

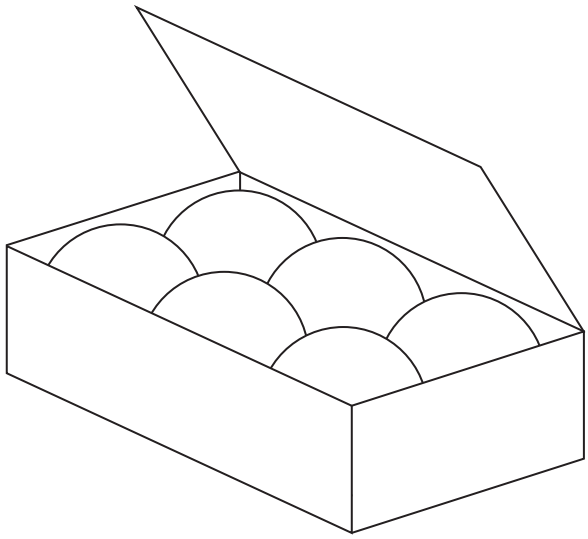
Answer £ _____

Turn over for the next question

7

13 Six balls just fit inside a box as shown.

The balls each have a diameter of 5 cm
The box is a cuboid.

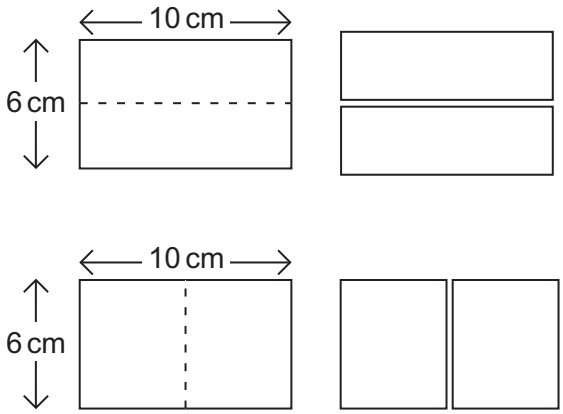


Work out the volume of the box.

[3 marks]

Answer _____ cm^3

14 Two 10 cm by 6 cm rectangles are cut in half as shown.



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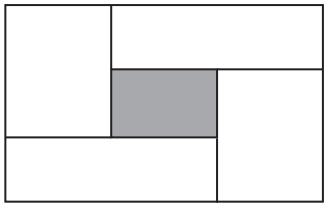
The four pieces are joined together, without overlap, as shown.



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Work out the perimeter of the shaded rectangle.

[3 marks]

Answer _____ cm

6

Turn over ▶

15 A bag has only red, white, blue and yellow counters.
A counter is taken from the bag at random.

Here are some of the probabilities.

Colour	Red	White	Blue	Yellow
Probability	0.1		0.3	

15 (a) The probability of taking a white counter is twice the probability of taking a yellow counter.

Complete the table.

[2 marks]

15 (b) There are 500 counters in the bag altogether.

Complete the table.

[2 marks]

Colour	Red	White	Blue	Yellow	Total
Number of counters in the bag	50				500

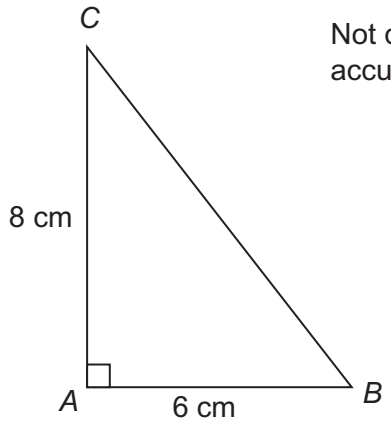
15 (c) All of the yellow counters are taken out of the bag.

Work out the probability of taking a red counter at random from the bag now.

[2 marks]

Answer _____

16 Work out length *BC*.



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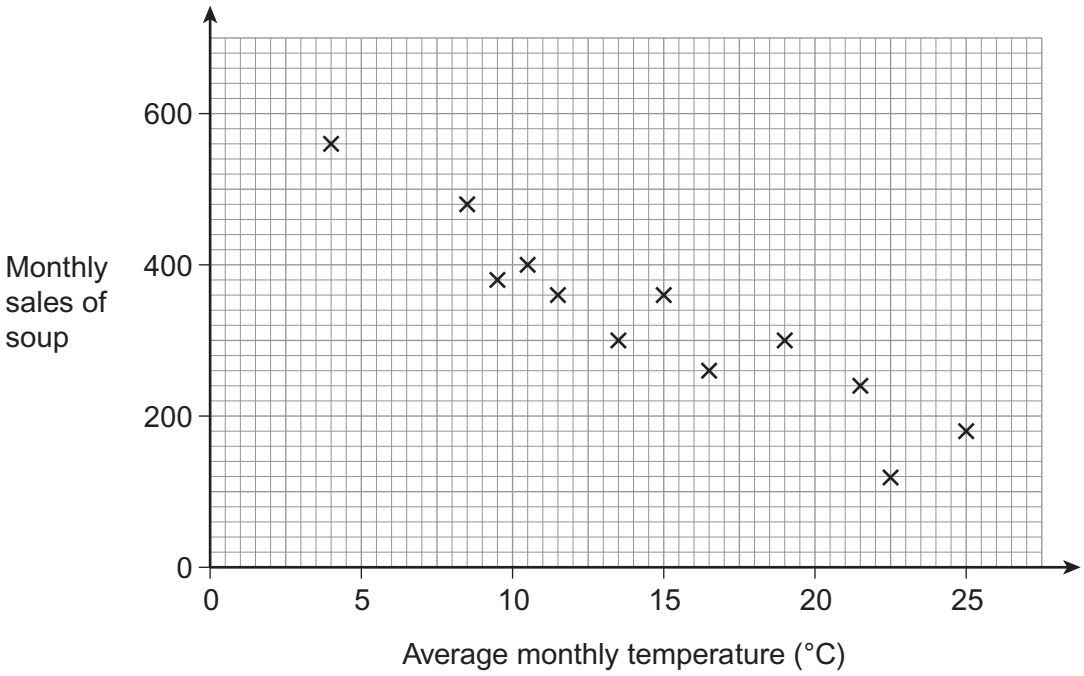
[3 marks]

Answer _____ cm

Turn over for the next question

9

17 A café owner records the average monthly temperature and the monthly sales of soup over a year.



17 (a) The scatter graph shows negative correlation.

Write down the relationship between average monthly temperature and monthly sales of soup.

[1 mark]

17 (b) The average monthly temperature for the next month is predicted to be 7°C

Use the graph to estimate the sales of soup that month.
You **must** show your working.

[2 marks]

Answer _____

18 Dwayne Pipes uses this formula to work out the cost of a plumbing job in pounds.

Cost of job = 35 × number of hours + 40

Ivor Wrench uses this formula to work out the cost of a plumbing job in pounds.

Cost of job = 40 × number of hours + 17.5

A job of x hours costs the same with Dwayne and Ivor.

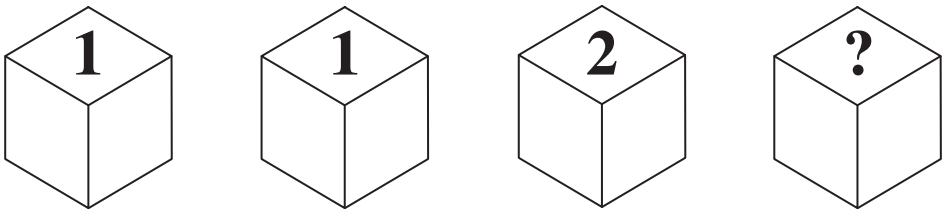
Set up and solve an equation to work out x.

[4 marks]

$x =$ _____

7

19 (a) The scores on four ordinary, six-sided dice are put in order.



The median of the **four** scores is 0.5 **less** than the mean of the four scores.

Circle the value of the fourth score.

[1 mark]

2 3 4 5 6

19 (b) The dice are rolled again.
The median of the scores is 0.5 **less** than the range.

Work out a possible set of scores.

[2 marks]

Answer _____ , _____ , _____ , _____

END OF QUESTIONS

3

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