AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
MATHEMATICS (LINEAR)

F

Foundation Tier Paper 1

Wednesday 4 November 2015 Morning Time allowed: 1 hour 15 minutes

Materials

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.

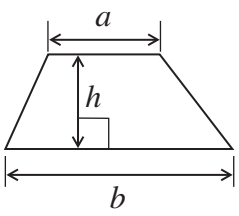
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

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 14 and 20. 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.

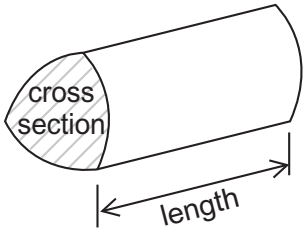
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

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

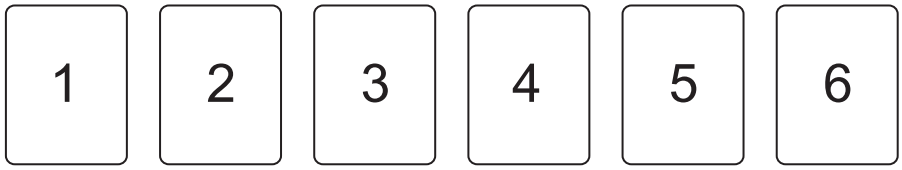


Volume of prism = area of cross section × length



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

1 Here are some cards.



A card is chosen at random.

Circle the probability word that describes these events.

1 (a) The card shows an odd number.

[1 mark]

Impossible Unlikely Evens Likely Certain

1 (b) The card shows a negative number.

[1 mark]

Impossible Unlikely Evens Likely Certain

1 (c) The card shows a 6

[1 mark]

Impossible Unlikely Evens Likely Certain

3

2 Work out $12 \div 1\frac{1}{2}$

[2 marks]

.....

.....

Answer .....

3 John buys a magazine for £1.49 and a newspaper for 55p
He pays with a £5 note.

How much change does he get?

[2 marks]

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Answer £ .....

4 Put these numbers in order.
Start with the smallest.

[1 mark]

1.04 1.43 1.4 1.34

Answer ..... , ... , ... , ...

5 (a) Solve $\frac{w}{2} = 14$

[1 mark]

$w =$ .....

5 (b) Simplify fully $3x + 4 - 5x - 7$

[2 marks]

.....

Answer .....

5 (c) Work out the value of $4a + 5b$ when $a = 4$ and $b = 1$

[2 marks]

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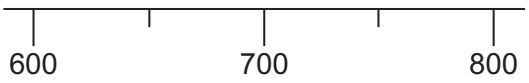
Answer .....

Turn over for the next question

10

6 (a) Draw an arrow to show 640 on the scale.

[1 mark]



Here is a table of postage costs.

Mass	Cost of posting
0 – 100 grams	£0.93
101 – 250 grams	£1.24
251 – 500 grams	£1.65
501 – 750 grams	£2.38

6 (b) How much **more** does it cost to post a 640 gram letter than a 64 gram letter?

[2 marks]

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Answer £ .....

6 (c) How many 150 gram letters can be posted for £10 ?

[2 marks]

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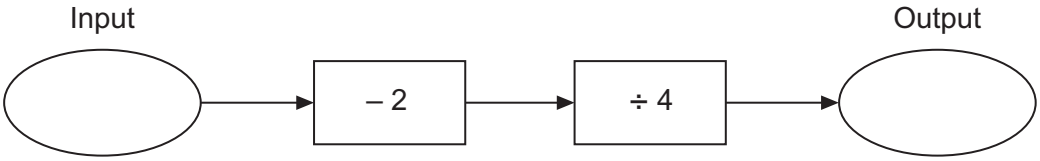
Answer .....

7 Match the name of each shape to a correct property.
One has been done for you.

[2 marks]

Kite	All sides equal
Parallelogram	One line of symmetry
Rectangle	All angles equal
Rhombus	No lines of symmetry

8 Here is a number machine.



8 (a) Work out the **output** when the input is 12

[1 mark]

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Answer .....

8 (b) Work out the **input** when the output is –3

[2 marks]

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Answer .....

10

9 Here are five numbers.

7 11 8 12 7

9 (a) Write down the mode.

[1 mark]

Answer .....

9 (b) Work out the mean.

[2 marks]

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Answer .....

10 (a) Circle the **two** values that are less than a half.

[1 mark]

$\frac{1}{2}$ 55% 0.45 $\frac{4}{7}$ 30%

10 (b) Circle the **two** values that are equal.

[1 mark]

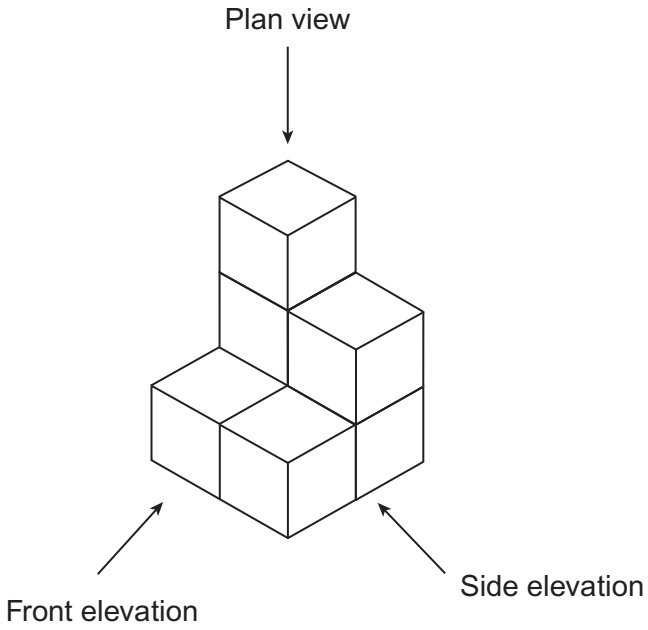
$\frac{1}{3}$ 20% 0.15 $\frac{1}{5}$ 30%

10 (c) Circle the fraction that is recurring when written as a decimal.

[1 mark]

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{3}{2}$

11 Some cubes of side 1 cm are put together to build this solid shape.



On the grids draw the plan view, side elevation and front elevation.

[3 marks]

Plan view

Side elevation

Front elevation

9

12 (a) Circle the **two** prime numbers.

[2 marks]

11 21 23 39 45

12 (b) Write down any **two** prime numbers that add up to a cube number.

[2 marks]

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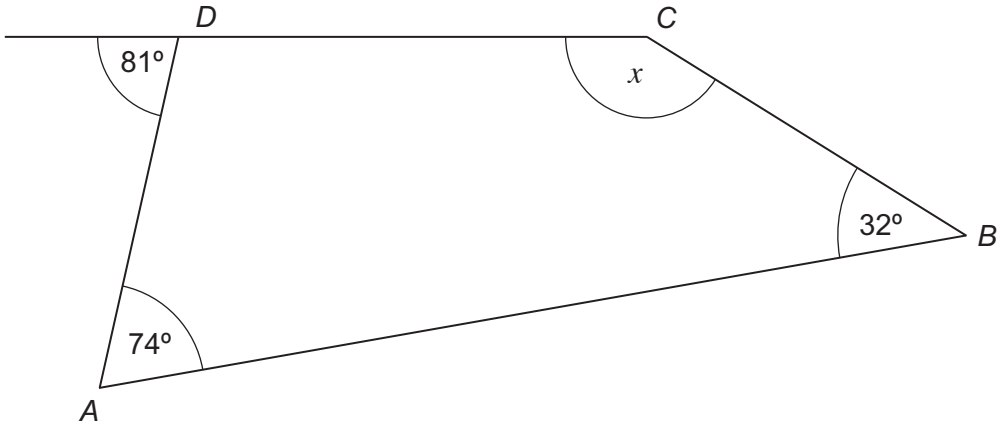
Answer ..... and .....

13 *ABCD* is a quadrilateral.
The side *CD* is extended.

Work out the size of angle x.

[3 marks]



Not drawn accurately

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Answer ..... degrees

Turn over for the next question

7

***14** Three shops sell the same washing machine.

Shop A	**Shop B**	**Shop C**
		
£150 deposit plus £60 a month for 6 months	Usual price £600 20% off	Usual price £720 $\frac{1}{4}$ off

In which shop is the washing machine cheapest?
You **must** show your working.

[5 marks]

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Answer .....

15 A shape is made from a rectangle R and a square S.

Not drawn accurately

The shape has a perimeter of 44 cm
The area of the square is 36 cm^2

Work out the area of the shape.

[4 marks]

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Answer ..... cm^2

Turn over for the next question

9

16 (a) Work out $\frac{3}{4} - \frac{1}{3}$

[2 marks]

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Answer .....

16 (b) Work out $\frac{1}{3} \times \frac{5}{6} \times \frac{9}{10}$

Give your answer in its simplest form.

[3 marks]

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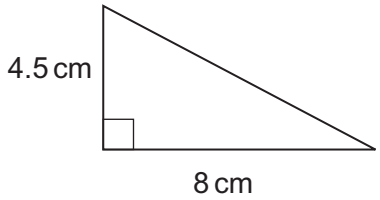
Answer .....

17 Here is a right-angled triangle.



Not drawn accurately

17 (a) Show that the area of this triangle is 18 cm^2

[1 mark]

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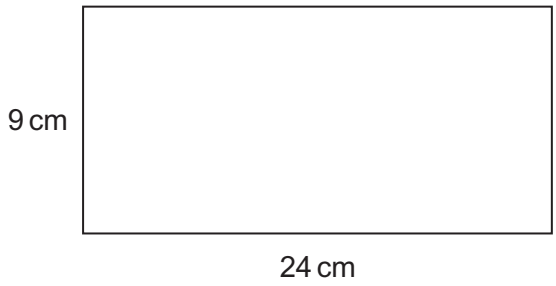
17 (b) Here is a rectangle.



Not drawn accurately

How many of the right-angled triangles from part (a), will fit in the rectangle?

[3 marks]

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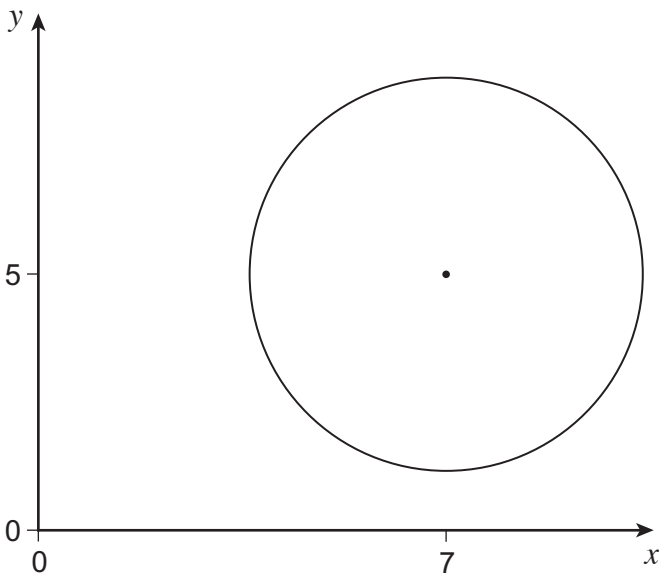
Answer .....

9

18 A circle radius 3 units, centre (7, 5) is shown.



Not drawn accurately

Work out the coordinates of **any** point that lies on the circumference of the circle.
You **must** show your working, which may be on the diagram.

[2 marks]

Answer (..... , ...)

19 Divide 270 in the ratio 3 : 2 : 1

[3 marks]

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

20 Fay is testing an ordinary six-sided dice to see if it is biased.

She throws the dice 120 times.

20 (a) Work out the number of times the dice is expected to land on 1

[1 mark]

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Answer .....

***20(b)** Here are the actual results.

Number on dice	1	2	3	4	5	6	Total
Frequency	5	19	17	20	21	38	120

Is the dice biased?
Tick a box.

Yes ☐ No ☐ Cannot tell ☐

Give a reason for your answer.

[2 marks]

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8

21 These expressions represent four numbers.

$2x + 2$	$3x - 1$	$4x - 6$	$5x + 2$

The sum of the first two expressions is 36

Work out the value of the median of the four numbers.

[5 marks]

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Answer .....

END OF QUESTIONS

5

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