AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
MATHEMATICS (LINEAR)

F

Foundation Tier Paper 2

Friday 6 November 2015 Morning Time allowed: 1 hour 45 minutes

Materials

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

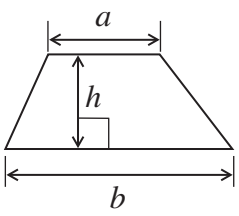
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- The quality of your written communication is specifically assessed in Questions 8, 11 and 18. 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.

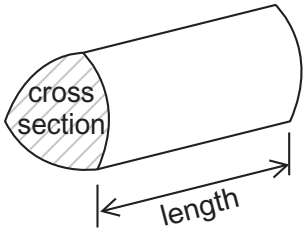
Advice
- In all calculations, show clearly how you work out your answer.

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 (a) A woman is facing North.
She turns clockwise to face West.

What angle does she turn through?
Circle your answer.

[1 mark]

45º 90º 180º 270º

1 (b) A man is facing North-East.
He turns 180º

In which direction is he facing now?
Circle your answer.

[1 mark]

North South-West West North-West

Turn over for the next question

2

2 (a) Which **two** units are sensible to measure the distance between two towns?
Circle your answers.

[2 marks]

centimetres metres kilometres inches miles

2 (b) Which **two** units are sensible to measure the mass of a mobile phone?
Circle your answers.

[2 marks]

grams ounces pounds kilograms tonnes

2 (c) Which **two** of these are sensible for the amount of juice in a full bottle?
Circle your answers.

[2 marks]

2000 ml 5000 litres 4 ml 1.5 litres 300 litres

3 (a) This formula is used to work out the cost, in £, of delivering packs of dog food.

$$\text{Cost} = \text{number of packs} \times 4 + 8$$

Work out the cost of delivering 12 packs of dog food.

[2 marks]

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.....

Answer £ .....

3 (b) This formula is used to work out the cost, in £, of packs of cat food.

$$\text{Cost} = \text{number of packs} \times 3.5$$

Tom has £20 to buy cat food.

Work out the **maximum** number of these packs he can buy.

[2 marks]

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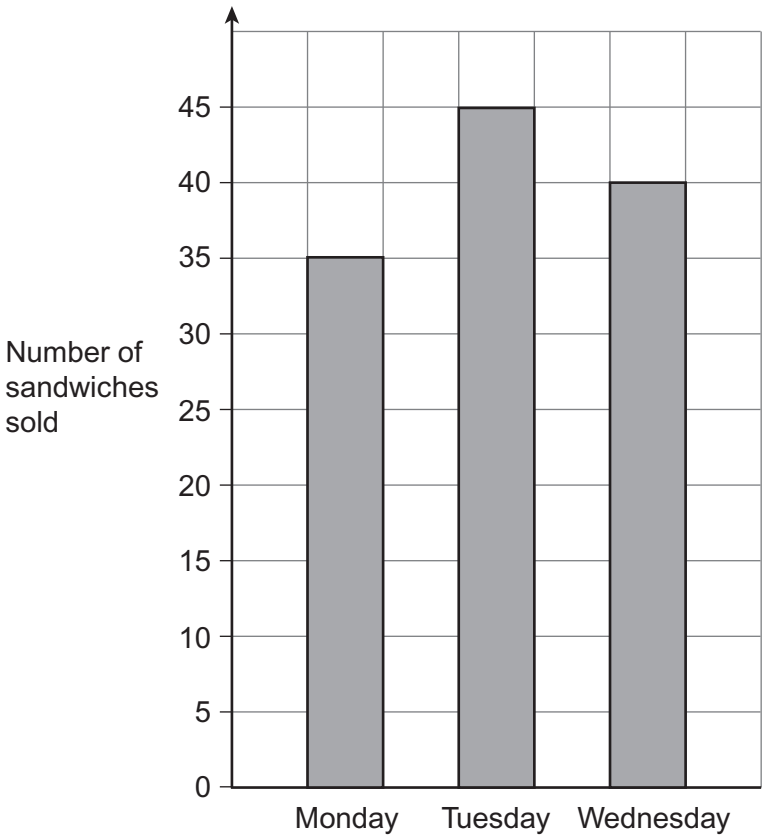
Answer .....

Turn over for the next question

10

4 The bar chart shows the number of sandwiches sold on Monday, Tuesday and Wednesday.



4 (a) A profit of £2 is made from each sandwich sold.

Work out the total profit made from sandwiches sold on the **three** days.

[4 marks]

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Answer £ .....

4 (b) Altogether 65 sandwiches were sold on Thursday and Friday.

A profit of £2 is made from each sandwich sold.
The total profit from sandwiches sold on Thursday is £80

Draw a pictogram for the number of sandwiches sold on Thursday and Friday.
Use the key given.

[4 marks]

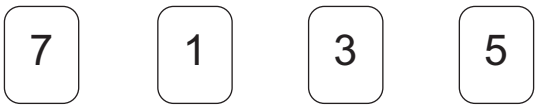
Key: ◯ represents **10** sandwiches sold

Thursday	
Friday	

Turn over for the next question

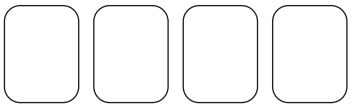
8

5 Here are four number cards.



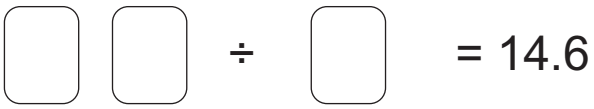
5 (a) Use all four cards to make the **smallest** possible number.

[1 mark]



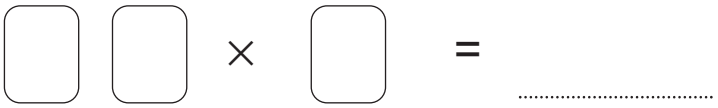
5 (b) Choose three of the cards to make this calculation correct.

[1 mark]



5 (c) Choose three of the cards to make the **largest** possible answer.
Work out the answer.

[2 marks]



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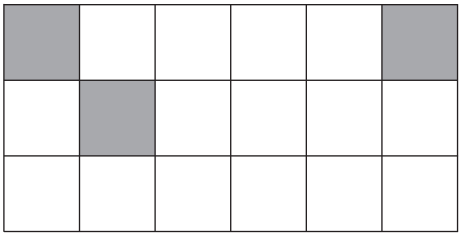
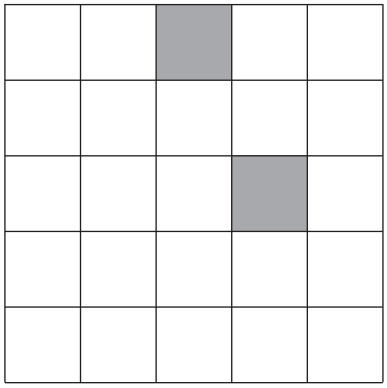
6 (a) Shade **one** more square so that this grid has one line of symmetry.

[1 mark]



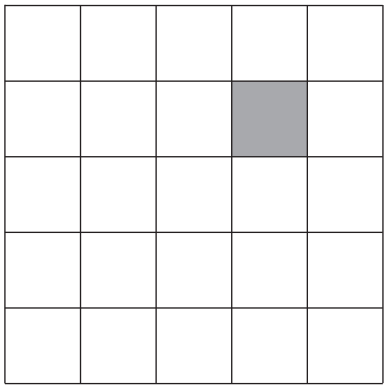
6 (b) Shade **three** more squares so that this grid has two lines of symmetry.

[2 marks]



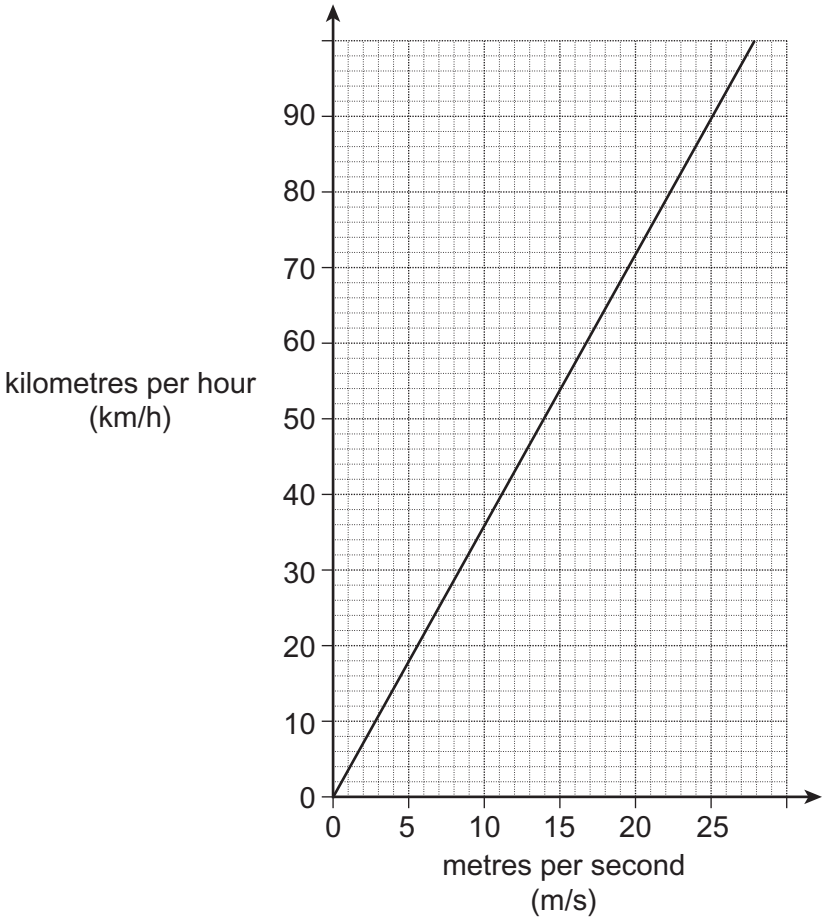
6 (c) Shade **four** more squares so that this grid has rotational symmetry of order 4

[2 marks]



9

7 Here is a conversion graph.



7 (a) Use the graph to convert 30 km/h to m/s

[1 mark]

Answer ..... m/s

7 (b) Use the graph to convert 60 m/s to km/h

[3 marks]

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Answer ..... km/h

8 Andy has a job for 5 days.
The table shows his pay for the first 4 days.

Day	Mon	Tue	Wed	Thu	Fri
Pay	£31.50	£40.50	£27	£18	

***8 (a)** Work out the range of his pay for the first 4 days.

[2 marks]

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Answer £ .....

8 (b) His mean pay for the 5 days is £28 per day.

How much was his pay on Friday?

[3 marks]

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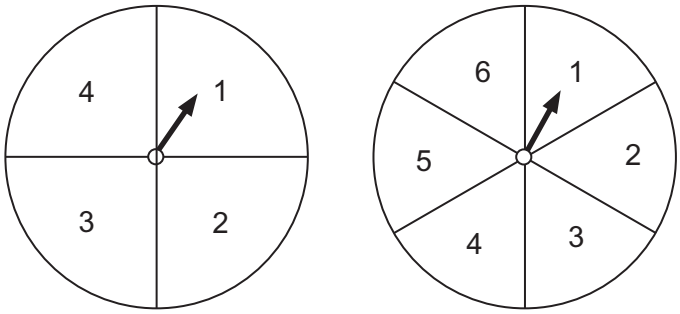
Answer £ .....

9

9 The arrows on these two fair spinners are spun.



The numbers shown by the arrows are added to get the score.

9 (a) Complete this table to show all the possible scores.

[2 marks]

+	**1**	**2**	**3**	**4**	**5**	**6**
1	2	3				
2	3					
3						
4						

9 (b) Work out the probability of scoring less than 4
Give your answer as a fraction in its simplest form.

[3 marks]

.....

Answer .....

9 (c) Work out the probability of scoring a prime number.

[2 marks]

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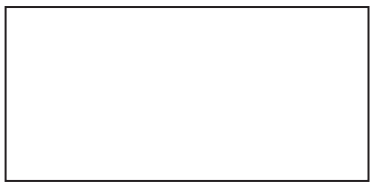
Answer .....

10 The diagram shows a rectangle.



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The perimeter of the rectangle is 28 cm

Work out the area of the rectangle.

[3 marks]

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Answer ..... cm^2

Turn over for the next question

10

***11** Show that 68 grams is approximately 10% more than 62 grams.

[2 marks]

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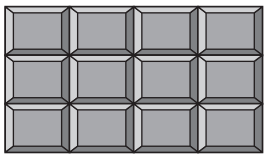
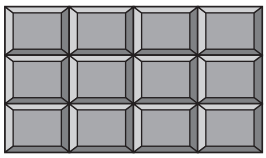
12 Gill has £3

Choco bar



72p

Toffoe bar



49p

She wants to buy five bars.
She wants as many Choco bars as possible.

How many Choco bars can she buy?

[3 marks]

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Answer .....

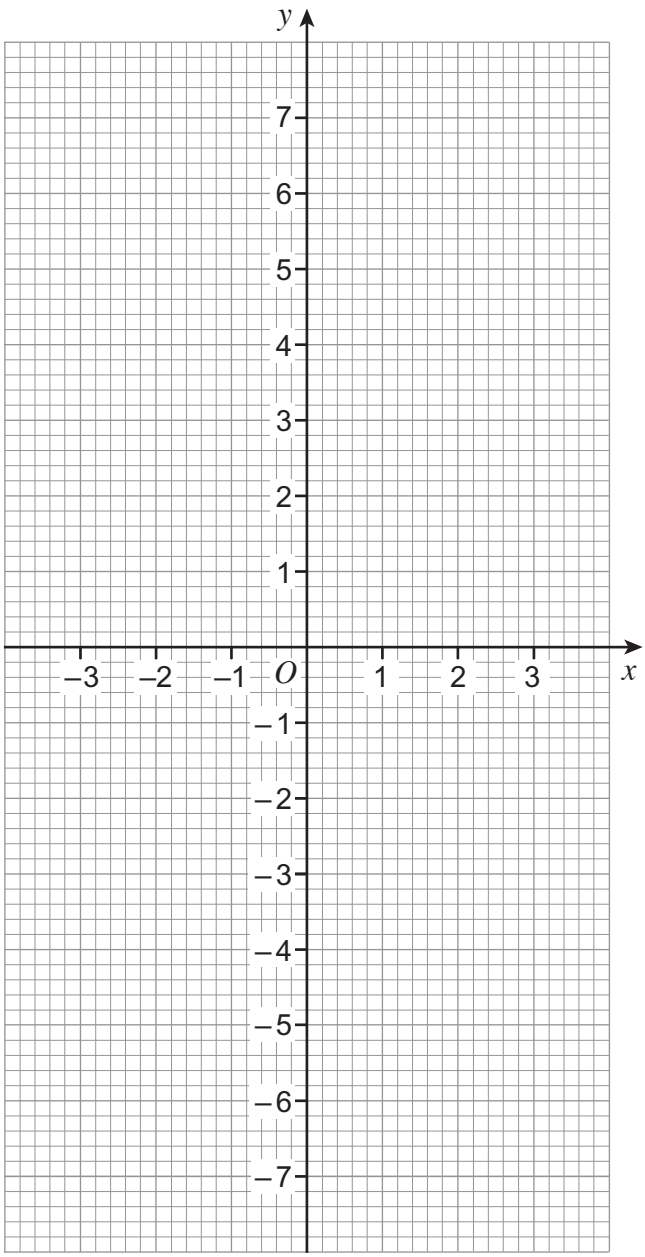
13 (a) Complete the table of values for $y = 3 - 2x$

[2 marks]

x	-2	0	2
y	7		

13 (b) On the grid, draw the graph of $y = 3 - 2x$ for values of x from -2 to 2

[2 marks]



9

14 Toni makes 40 dolls.

She sells $\frac{4}{5}$ of them at one price for a total of £96

She then reduces the price and sells the rest for a total of £20

By how much did she reduce the price?

[5 marks]

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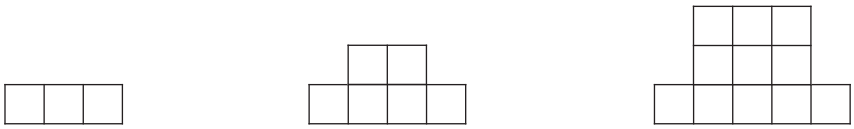
Answer .....

15 Here is a sequence of patterns made with squares.



Pattern 1 Pattern 2 Pattern 3

The rule for working out the number of squares in each pattern is

Square the pattern number and then add 2

15 (a) How many squares are in pattern 7?

[1 mark]

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Answer .....

15 (b) Which pattern has 123 squares?

[2 marks]

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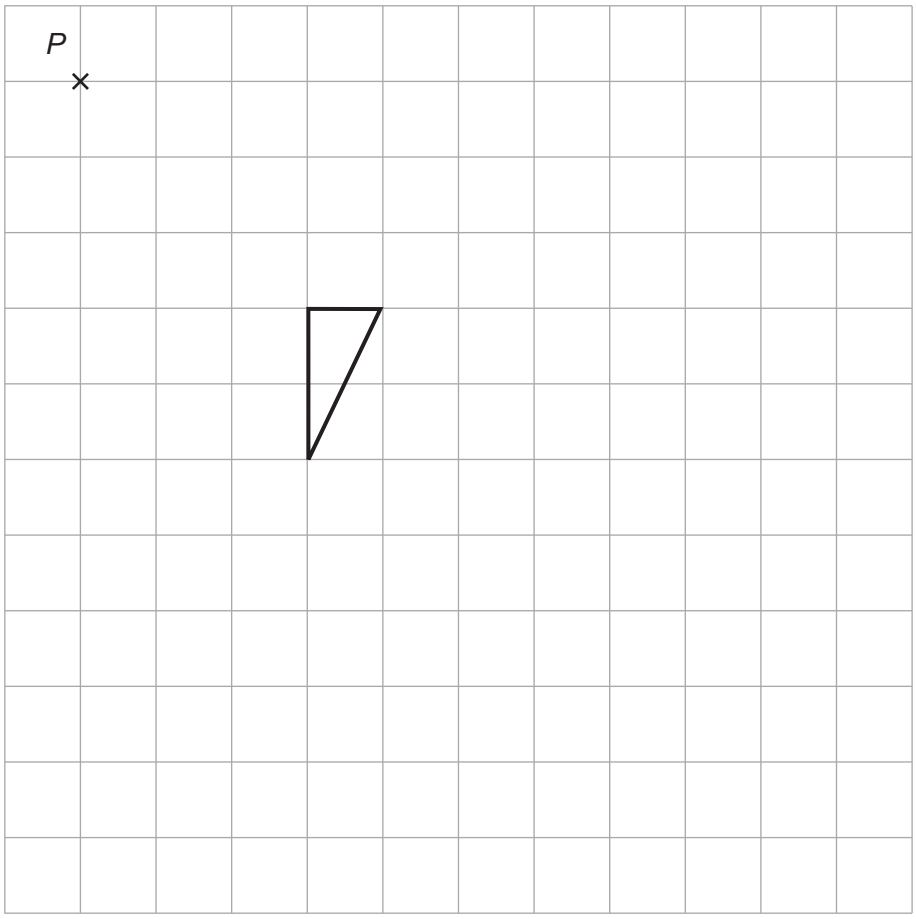
Answer .....

8

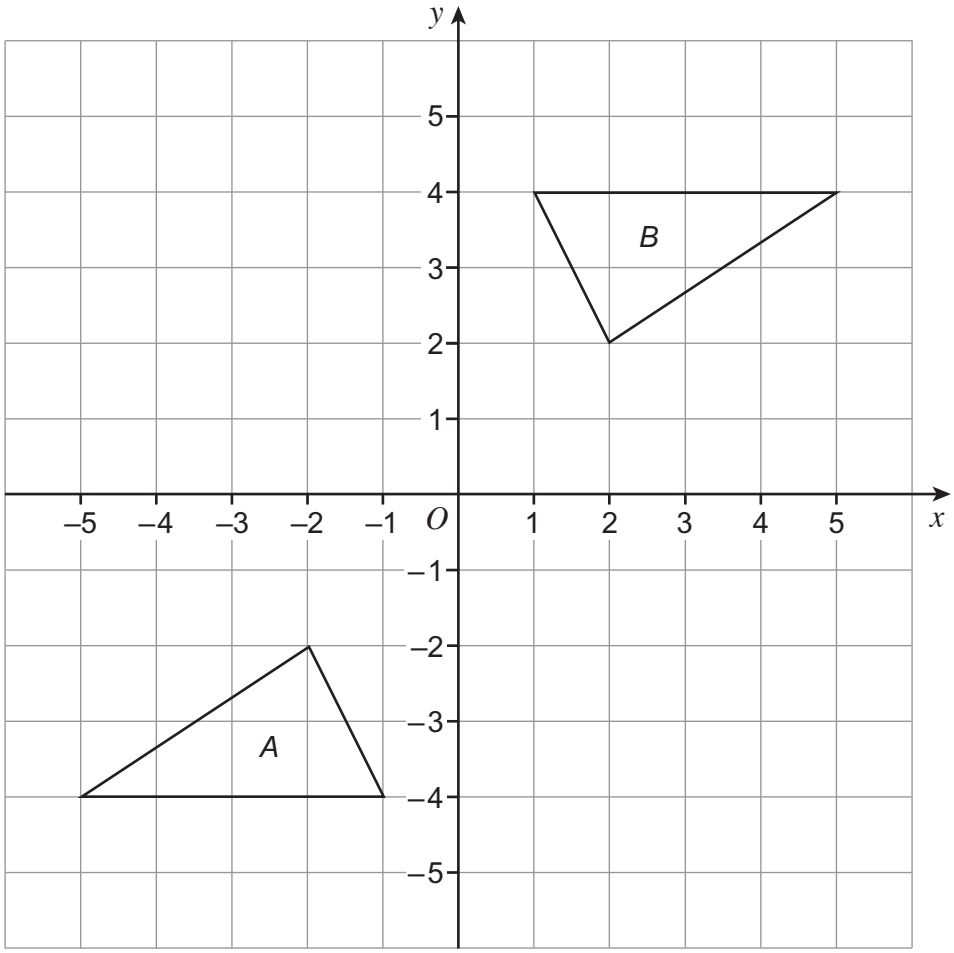
16 (a) Enlarge the triangle by scale factor 2, using point *P* as the centre of enlargement.

[3 marks]



16 (b) Describe fully the **single** transformation that maps shape *A* onto shape *B*.

[3 marks]



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6

17 A family uses 300 units of gas.

Each unit of gas costs 19p without VAT.
VAT of 5% is added to the bill.

Work out the total gas bill.

[4 marks]

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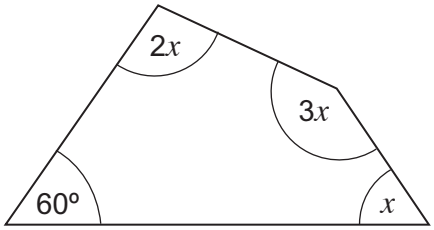
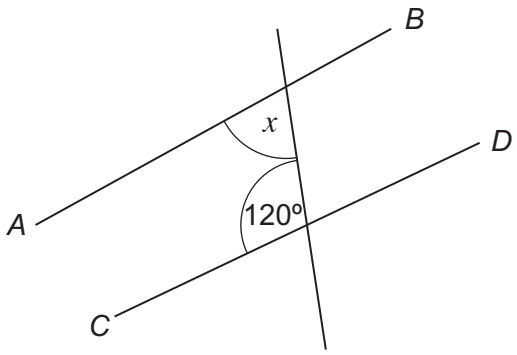
Answer £ .....

***18**





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Show that *AB* is **not** parallel to *CD*.

[4 marks]

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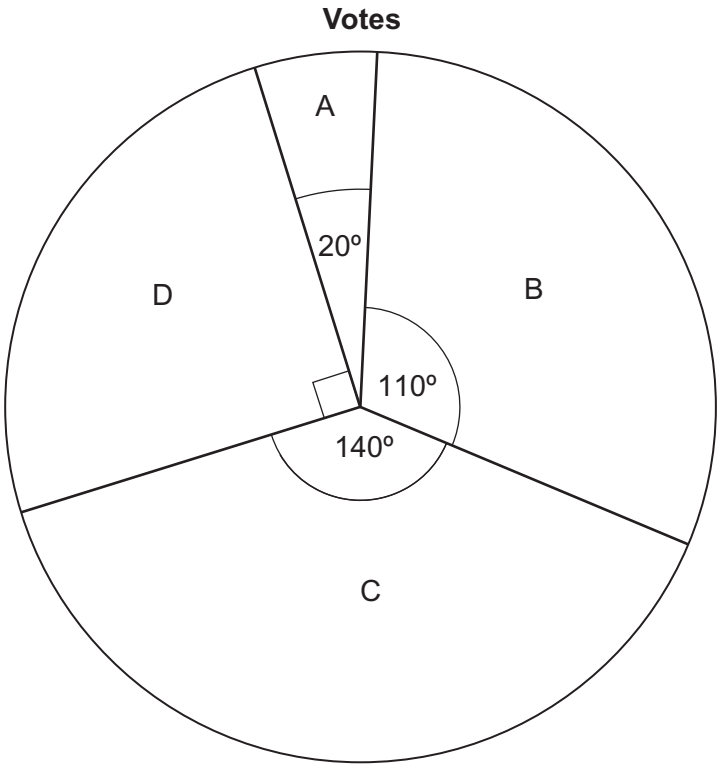
Turn over for the next question

8

Turn over ▶

19 The pie chart shows information about how people voted in an election.



1800 people voted for D.

How many **more** people voted for C than B?

[3 marks]

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Answer .....

20 (a) Solve $6x + 4 = 2(2x - 5)$

[3 marks]

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$x =$ .....

20 (b) Multiply out $y(2 - y^3)$

[2 marks]

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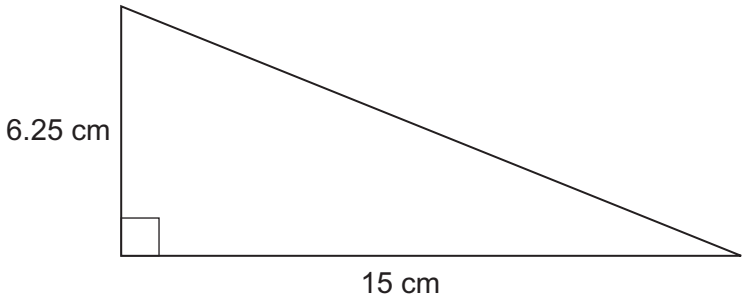
Answer .....

21 Work out the length of the hypotenuse.



Not drawn accurately

[3 marks]

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.....

Answer ..... cm

11

22 Abby and Judy share some money.
Abby gets 25%

22 (a) Write Abby's share : Judy's share as a ratio.
Give your answer in its simplest form.

[2 marks]

.....

.....

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

22 (b) Judy gets £19.50

How much does Abby get?

[2 marks]

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Answer £ .....

23 Here is information about the scores, t, of class A in a test.

Score	Frequency		
$0 < t \leqslant 10$	4		
$10 < t \leqslant 20$	8		
$20 < t \leqslant 30$	9		
$30 < t \leqslant 40$	3		
$40 < t \leqslant 50$	1		

The mean score for class B in the same test is 22

Dan says,

"On average, class A did better than class B."

Is he correct?
You **must** show your working.

[4 marks]

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Answer .....

8

24 a and b are different prime numbers with $a > b$

24 (a) Give an example to show that $a^2 + b^2$ could be even.

[1 mark]

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24 (b) Give an example to show that $a^2 + b^2$ could be odd.

[1 mark]

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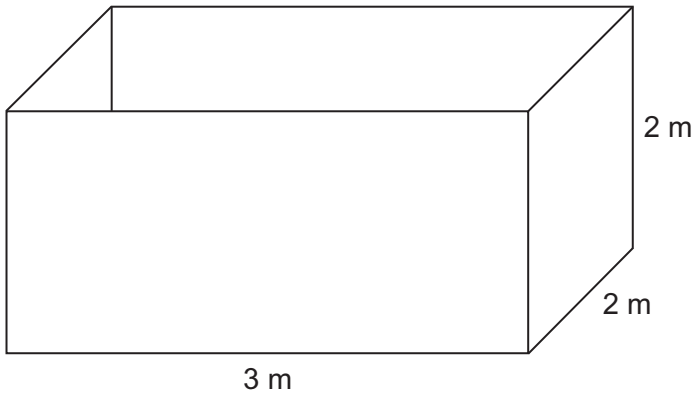
25 An empty tank is in the shape of a cuboid as shown.



The tank is to be filled with water at 1.25 litres per second.

1 m^3 = 1000 litres

Work out the time taken to fill the tank.
Give your answer in hours and minutes.

[5 marks]

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Answer ..... hours ..... minutes

END OF QUESTIONS

7

There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED