AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

GCSE
MATHEMATICS (LINEAR)

F

Foundation Tier Paper 2

Thursday 9 June 2016 Morning Time allowed: 1 hour 45 minutes

Materials

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

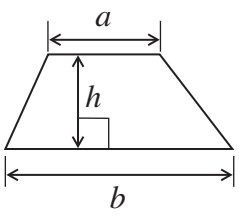
Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

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 4, 17 and 22. These questions are indicated with an asterisk (*).
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

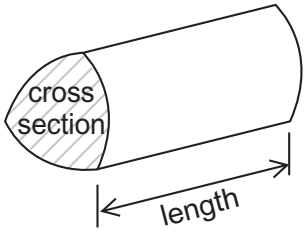
Advice
- In all calculations, show clearly how you work out your answer.

Formulae Sheet: Foundation Tier

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



Volume of prism = area of cross section × length



Do not write outside the box

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

1 (a) Circle the multiple of 9

4.5 19 36 42 60

[1 mark]

1 (b) Circle the factor of 76

4 6 8 24 152

[1 mark]

1 (c) Circle the cube number.

4 16 30 81 1000

[1 mark]

Turn over for the next question

3

Do not write outside the box

2 (a) Here are some letter cards.

S	T	T	A	R	T

Here is a list of words that describe chance.

impossible unlikely evens likely certain

A card is picked at random.

Choose **one** word from the list to describe each sentence.

[2 marks]

The card has a letter T on it. _____

The card has a letter W on it. _____

2 (b) Here are seven blank cards.

Write a letter on each card so that when picking a card at random,

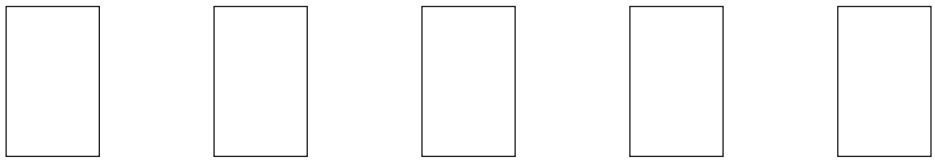
B is likely

and D has twice the chance of being picked as C.

[2 marks]

Do not write outside the box

2 (c) Here are five blank cards.



Write the number 2, 3 or 4 on each card so that when picking a card at random,

4 has the greatest chance of being picked but is **not** certain

and 2 and 3 have the same chance of being picked.

[2 marks]

Turn over for the next question

6

Do not write outside the box

3 (a) 30 men and 10 women choose one activity from fishing, walking and climbing.

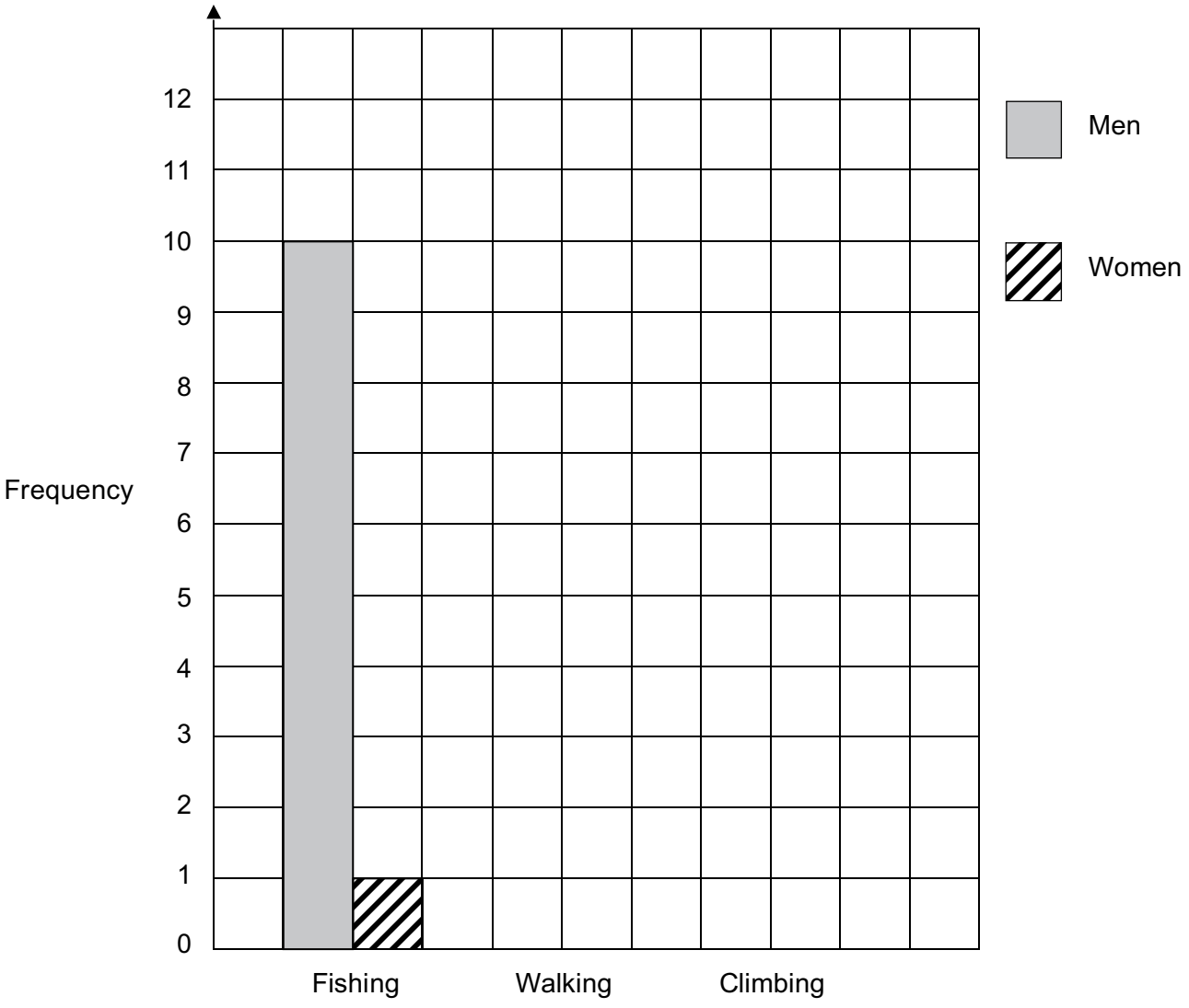
10 men choose fishing.

1 woman chooses fishing.

12 men choose walking.

2 more men than women choose climbing.

Complete the dual bar chart.



[3 marks]

Do not write outside the box

3 (b) 38 children choose a sport.

Sport	Football	Hockey	Tennis
Number of children	24	10	4

For each sport a **minimum** of 1 adult for every 8 children is needed.

Work out the **minimum** number of adults needed in total.
Put your answers in the table.

[3 marks]

Sport	Football	Hockey	Tennis	**Total**
Number of children	24	10	4	38
Minimum number of adults needed				

Turn over for the next question

6

Do not write outside the box

4 Jack's normal pay is £10.50 per hour.

***4 (a)** Work out his pay for working 35 hours.

[2 marks]

Answer £ _____

4 (b) On Saturday, his pay per hour is £5.25 **more** than his normal pay of £10.50

How much is he paid for working 4 hours on Saturday?

[2 marks]

Answer £ _____

Do not write outside the box

4 (c) Another week he

works 28 hours at normal pay

and works on Saturday.

His total pay for the week is £372.75

How many hours does he work on Saturday?

[3 marks]

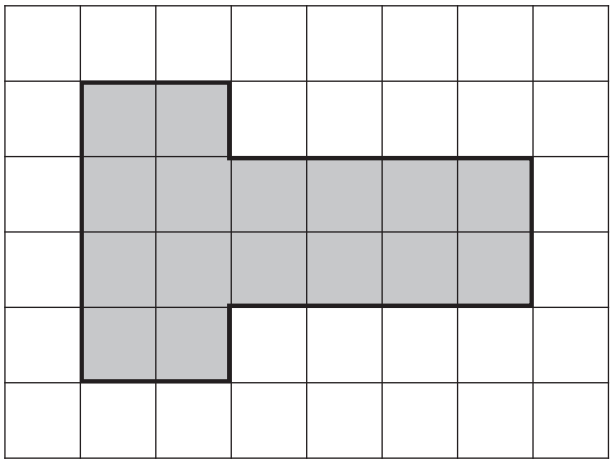
Answer _____ hours

Turn over for the next question

7

Do not write outside the box

5 (a) The diagram shows a shape on a centimetre grid.



Work out the area of the shape.
State the units of your answer.

[2 marks]

Answer _____

5 (b) Tick any statements that are true for the shape in part (a).

[2 marks]

The shape covers **less** than one-third of the grid. ☐

The shape covers **exactly** one-third of the grid. ☐

The shape covers **more** than one-third of the grid. ☐

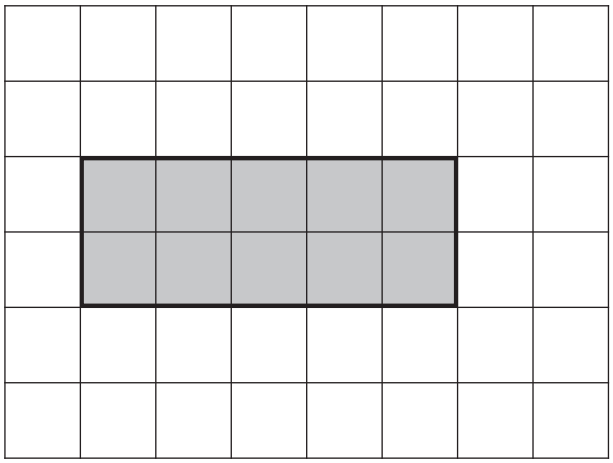
The shape covers **less** than one-half of the grid. ☐

The shape covers **exactly** one-half of the grid. ☐

The shape covers **more** than one-half of the grid. ☐

Do not write outside the box

5 (c) On this centimetre grid, a rectangle is shown.

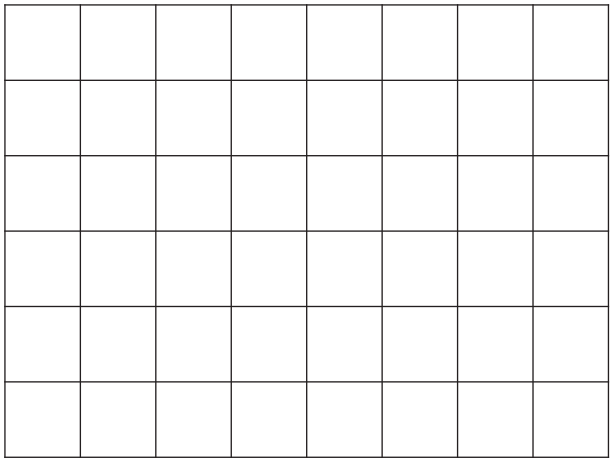


On the centimetre grid below, draw a different rectangle

with the **same** perimeter and a **smaller** area.

Use whole squares only.

[2 marks]



6

Do not write outside the box

6 (a) Ali is paid £20 000 a year.
He saves three-eighths of this amount.

How much does he save?

[2 marks]

Answer £ _____

6 (b) Belle is paid £32 000 a year.
Her rent is £6000

Write the rent as a percentage of her pay.

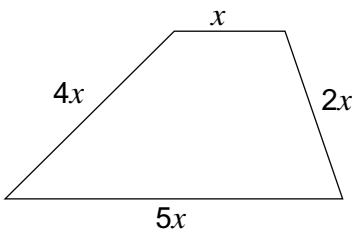
[2 marks]

Answer _____ %

Do not write outside the box

7 The diagram shows a trapezium.
All sides are measured in centimetres.

Not drawn accurately



Work out the total length of the sides when $x = 2.5$ cm

[2 marks]

Answer _____ cm

Turn over for the next question

6

Do not write outside the box

8 (a) Work out 10 km + 1.5 km + 500 m
Give your answer in metres.

[2 marks]

Answer _____ metres

8 (b) How many 125 millimetre glasses can be filled from a 2 litre bottle of water?

[2 marks]

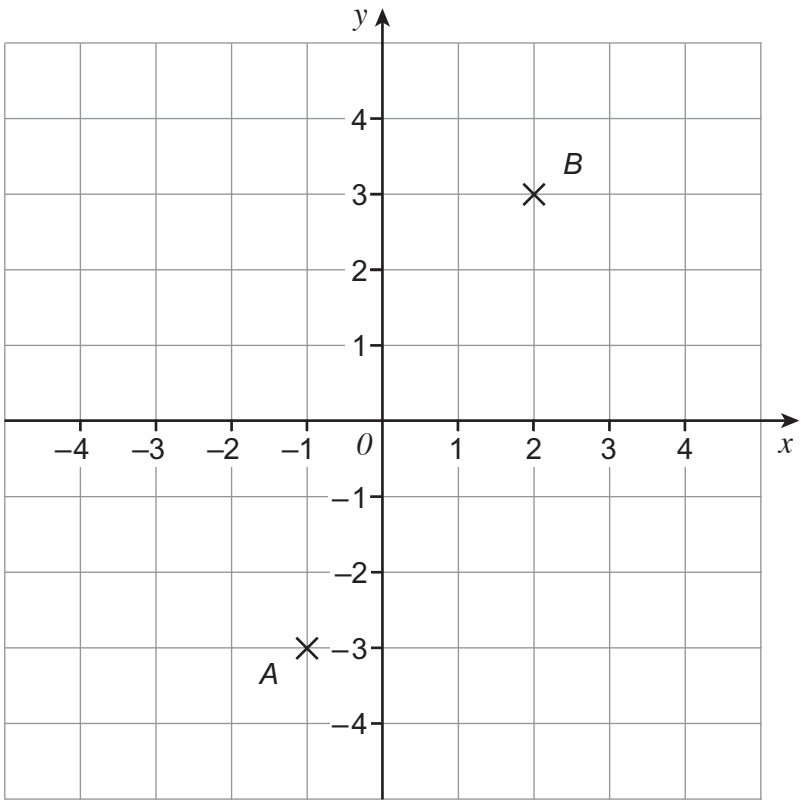
Answer _____

8 (c) Use 5 miles = 8 km to show that 240 miles is approximately 380 km

[2 marks]

Do not write outside the box

9 Points *A* and *B* are plotted on the centimetre grid.



9 (a) Write down the coordinates of *A*.

[1 mark]

Answer (_____ , _____)

9 (b) *C* is a point on the grid.
The coordinates of *C* are integers.

AC = 3 cm and *BC* = 6 cm

Work out the coordinates of *C*.

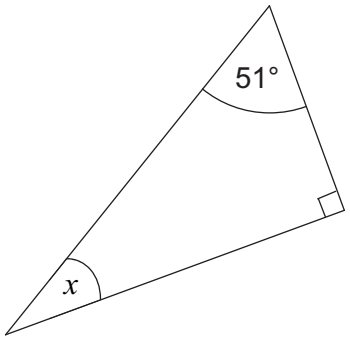
[2 marks]

Answer (_____ , _____)

9

Do not write outside the box

10 (a)



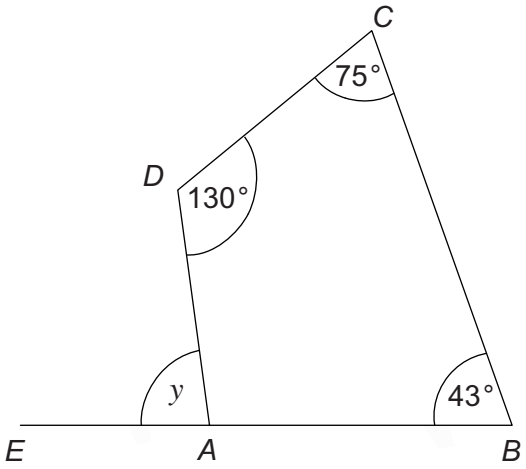
Not drawn accurately

Work out the size of angle x.

[1 mark]

Answer _____ degrees

10 (b) *ABCD* is a quadrilateral.
EAB is a straight line.



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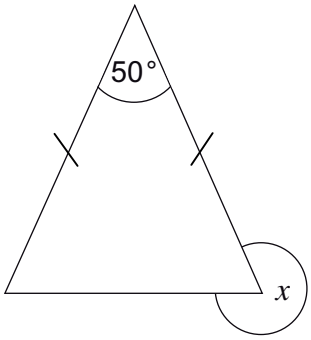
Work out the size of angle y.

[2 marks]

Answer _____ degrees

Do not write outside the box

10 (c) The diagram shows an isosceles triangle.



Not drawn accurately

Work out the size of angle x.

[3 marks]

Answer _____ degrees

11 (a) Simplify $5a + 4b - 2a + b$

[2 marks]

Answer _____

11 (b) Solve $4x - 7 = 9$

[2 marks]

x = _____

10

Do not write outside the box

12 Here is a menu.

Menu

Starter	**Main course**
Soup	Curry
Melon	Burger
Paté	

Sarah wants to have one starter and one main course.

List **all** the different choices she can have.

[2 marks]

Do not write outside the box

13 (a) Work out the value of 8.2^3
Give your answer to 1 decimal place.

[2 marks]

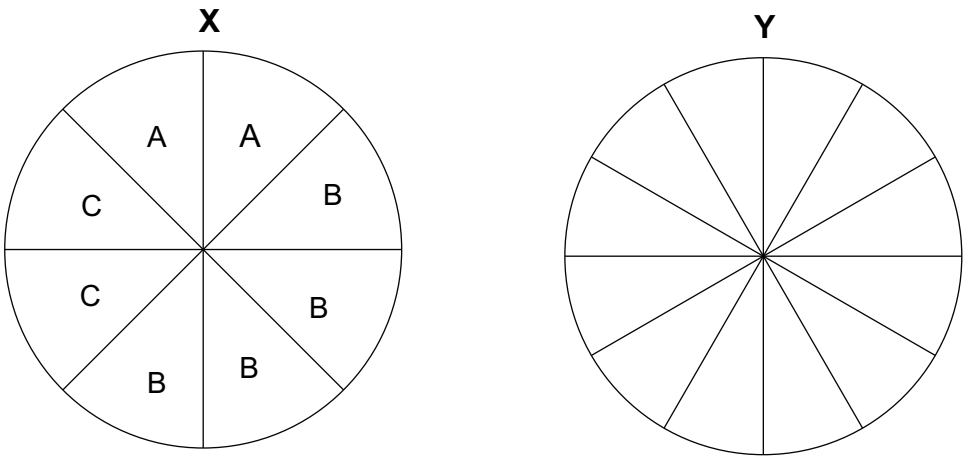
Answer _____

13 (b) Work out the value of $\frac{\sqrt{6.76}}{2.5}$

[1 mark]

Answer _____

14 Here are two fair spinners X and Y.



Put the letter A, B or C on each section of spinner **Y** so that the probability of landing on each letter is the same for each spinner.

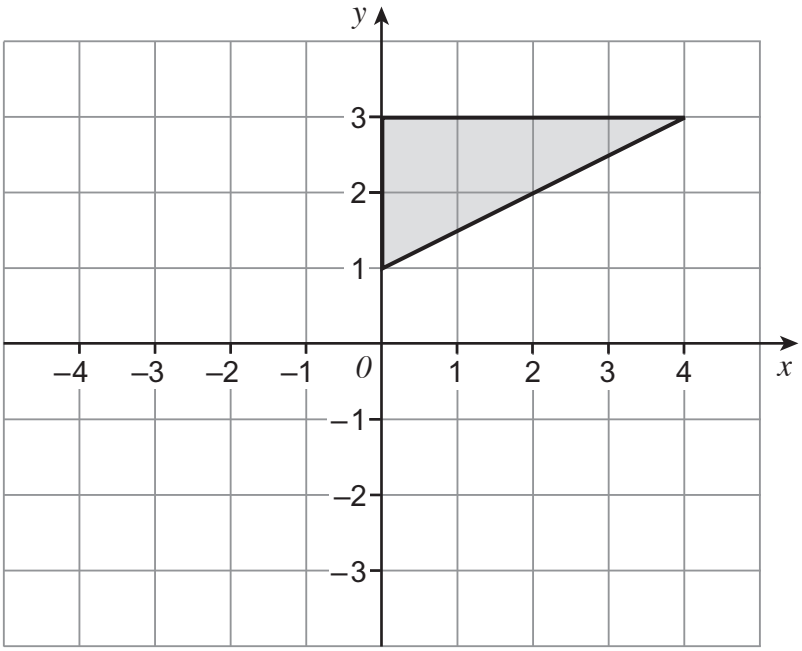
[2 marks]

7

Do not write outside the box

15 (a) Reflect this triangle in the x-axis.

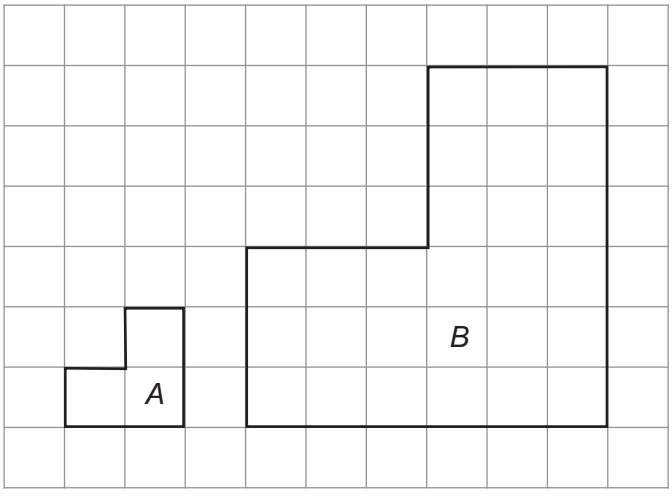
[1 mark]



15 (b) Shape B is an enlargement of shape A.

Write down the scale factor of the enlargement.

[1 mark]



Answer _____

Do not write outside the box

16 Sam played in 15 hockey matches.
The stem-and-leaf diagram shows the time he played in each match.

Key: 2 | 5 represents 25 minutes

2	5	8				
3	0	3	4			
4	1	6	7	8		
5	4	5	7	8	8	9

The table shows information about the number of goals that Sam scored.

Number of minutes Sam played in a match	less than 30	30 to 45	more than 45
Average number of goals Sam scored in each match	0	1	2

Work out the number of goals that Sam scored in the 15 matches.

[3 marks]

Answer _____

5

Do not write outside the box

***17 (a)** Alice wants to book a holiday for one adult and one child.

Holiday

£720 per adult

£430 per child

Special Offer
15% off

Alice has £1000

Does she have enough money to book this holiday using the special offer?
Tick a box.

Yes ☐ No ☐

You **must** show your working.

[5 marks]

Do not write outside the box

17 (b) Ben changes £800 to Euros before he goes on holiday.
£1 = 1.25 Euro

He spends 895 Euros.

He changes the Euros that he has left to Pounds (£).
The exchange rate is now £1 = 1.40 Euro

How many Pounds does he get back?

[4 marks]

Answer £ _____

Turn over for the next question

9

Do not write outside the box

18 Here are the ingredients to make 8 biscuits.

75 g	flour
50 g	sugar
40 g	butter
2	egg yolks

Work out the ingredients to make 20 biscuits.

[3 marks]

_____ g flour

_____ g sugar

_____ g butter

_____ egg yolks

Do not write outside the box

19 This formula converts degrees Celsius (C) to degrees Fahrenheit (F).

$$F = \frac{9}{5}C + 32$$

Use the formula to convert 28°C to °F
Give your answer to the nearest whole number.

[3 marks]

Answer _____ °F

Turn over for the next question

6

Do not write outside the box

20 (a) The nth term of a sequence is $6 - 2n$

Work out the first three terms of the sequence.

[2 marks]

Answer _____ , _____ , _____

20 (b) Here is the term-to-term rule for a different sequence.

Multiply previous term by 2 and then subtract 3

The third term in this sequence is 31

Work out the **first** term.

[3 marks]

Answer _____

Do not write outside the box

21 The table shows information about the pay per hour of 40 people.

Pay per hour, x (£)	Frequency		
$5 < x \leqslant 15$	14		
$15 < x \leqslant 25$	12		
$25 < x \leqslant 35$	11		
$35 < x \leqslant 45$	2		
$45 < x \leqslant 55$	1		
	Total = 40		

21 (a) Which group contains the median pay per hour?
Circle your answer.

[1 mark]

$5 < x \leqslant 15$ $15 < x \leqslant 25$ $25 < x \leqslant 35$ $35 < x \leqslant 45$ $45 < x \leqslant 55$

21 (b) Work out an estimate of the mean pay per hour.

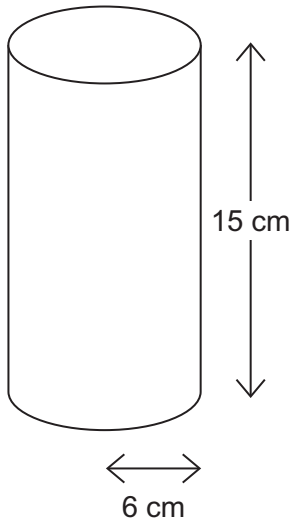
[4 marks]

Answer £ _____

10

Do not write outside the box

22 (a) The diagram shows a cylinder.



The radius of the base is 6 cm
The height is 15 cm

Work out the volume.

[3 marks]

Answer _____ cm^3

Do not write outside the box

***22 (b)** 1000 cm^3 = 1 litre

A tank contains 45 000 cm^3 of water.
The tank leaks at 0.75 litres/minute.

How long does the tank take to empty?

[4 marks]

Answer _____

Turn over for the next question

7

Do not write outside the box

23 A baker makes 130 loaves so that there are

6 times as many white loaves as granary loaves

half as many brown loaves as white loaves.

How many of each type does he make?

[3 marks]

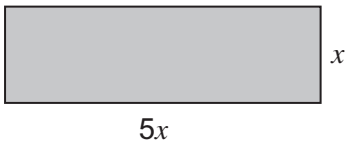
White _____

Brown _____

Granary _____

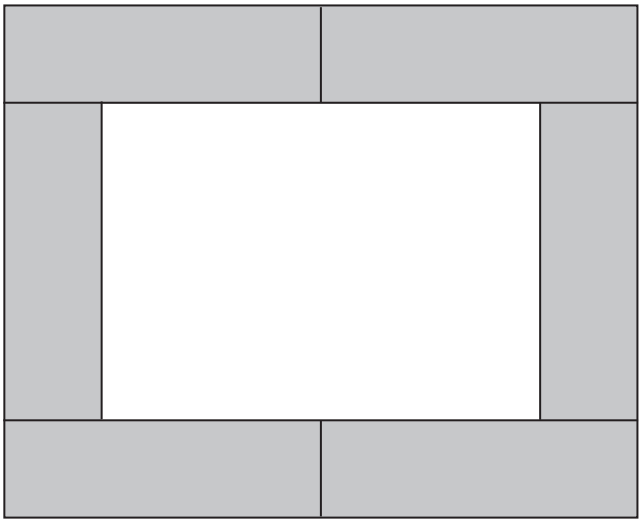
Do not write outside the box

24 The diagram shows a rectangle.



Not drawn accurately

Six of these rectangles are joined to make this shape.



The area of the white rectangle in the middle is 1440 cm^2

Work out the area of **one** shaded rectangle.

[5 marks]

Answer _____ cm^2

END OF QUESTIONS

8

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ANSWER IN THE SPACES PROVIDED

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