



Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work

GCSE

F

MATHEMATICS

Foundation Tier Paper 3 Calculator

8300/3F

Monday 8 June 2020 Morning

Time allowed: 1 hour 30 minutes

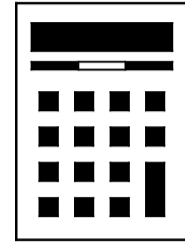
At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]



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 on blank pages.**
- **If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).**
- **Do all rough work in this book. Cross through any work you do not want to be marked.**



INFORMATION

- **The marks for questions are shown in brackets.**
- **The maximum mark for this paper is 80.**
- **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.

DO NOT TURN OVER UNTIL TOLD TO DO SO



Answer ALL questions in the spaces provided.

1 What is 6.2819 to 2 decimal places?

Circle your answer. [1 mark]

6.2

6.28

6.29

6.3

2 50% of a number is 40

Circle the number. [1 mark]

20

80

800

2000



3 Circle the correct statement. [1 mark]

$$0.07 \geq 0.7$$

$$0.07 = 0.7$$

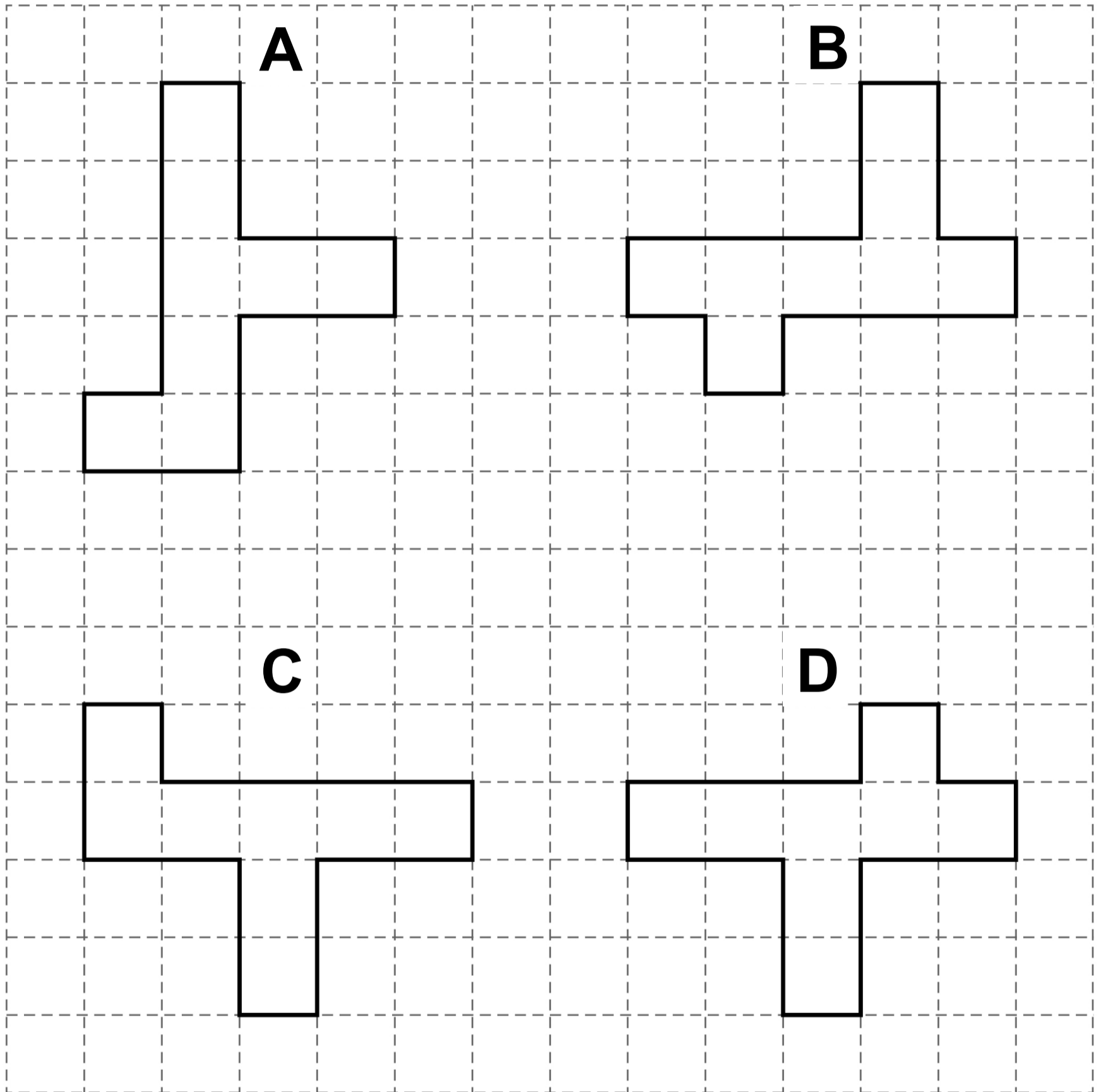
$$0.07 < 0.7$$

$$0.07 > 0.7$$

[Turn over]



4 Shapes A, B, C and D are on a square grid.



7

Which TWO shapes are congruent?

Circle your answer. [1 mark]

A and C

B and A

C and D

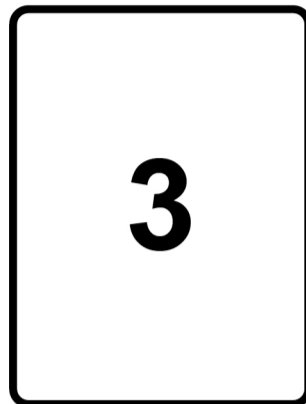
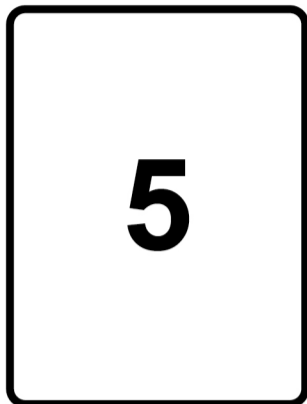
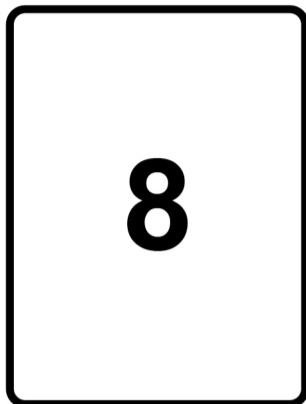
D and B

[Turn over]

4



5 Here are three number cards.



5 (a) Use all three cards to make the answer to this calculation a multiple of 10 [1 mark]

$$\boxed{} \boxed{} \times \boxed{}$$

5 (b) Use all three cards to make the answer to this calculation a single-digit number. [1 mark]

$$\square \times \square - \square$$

5 (c) Use all three cards to make this a correct calculation. [1 mark]

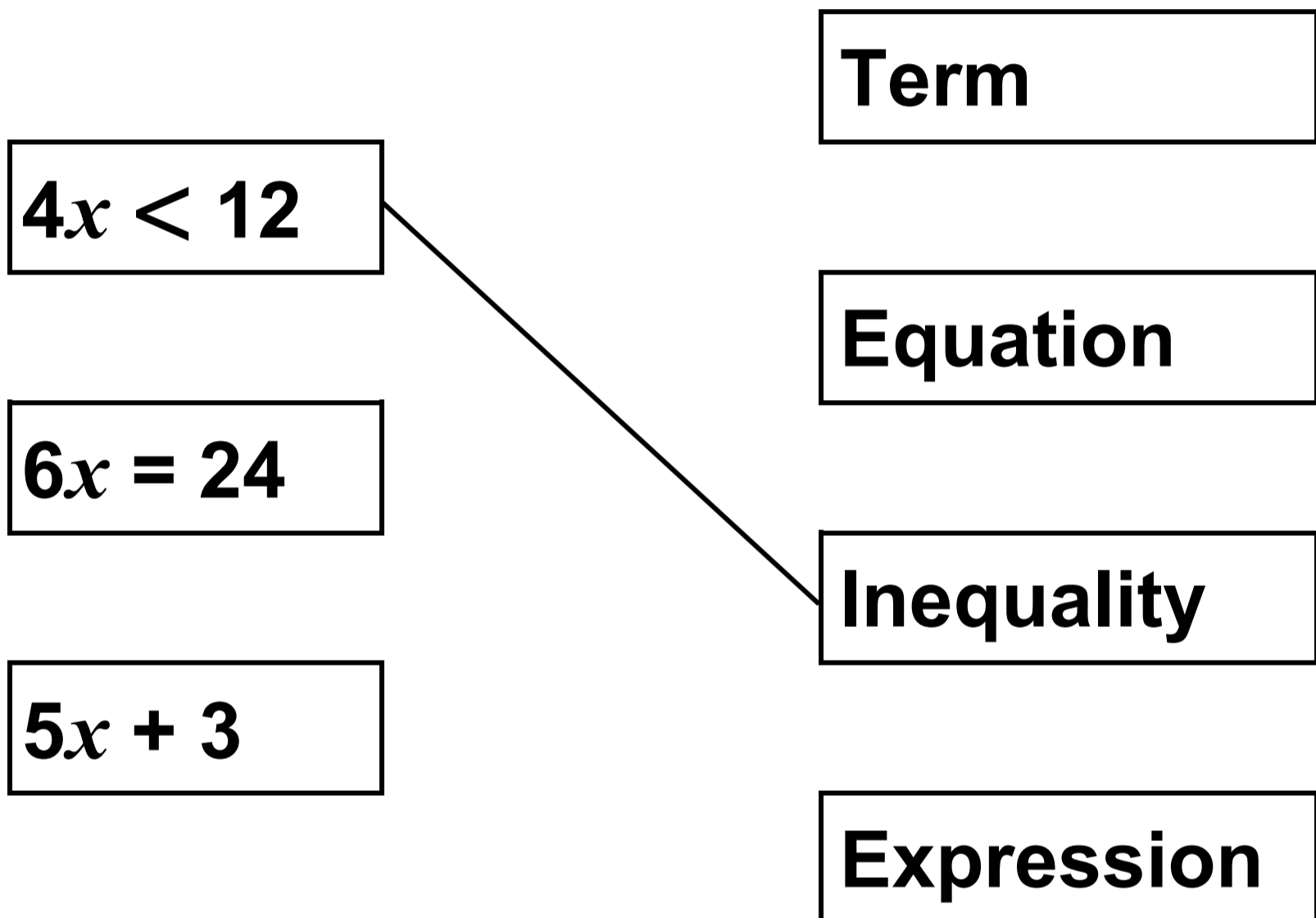
$$\begin{array}{r} \square \\ \hline \square \end{array} \begin{array}{r} 6 \\ + \\ \square \\ \hline \square \end{array} = 1$$

[Turn over]



7 Match the algebra to the correct description.

One has been done for you. [2 marks]



[Turn over]



8 A team of two players is picked from these people.

Female	Amy (A)	Laura (L)	
Male	Erik (E)	Rob (R)	Tim (T)

The team MUST have one female player and one male player.

Complete this list to show ALL of the possible teams. [2 marks]



Female player	Male player
A	E

[Turn over]

4



9 500 people started a race.

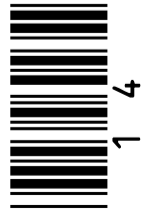
280 were men and the rest were women.

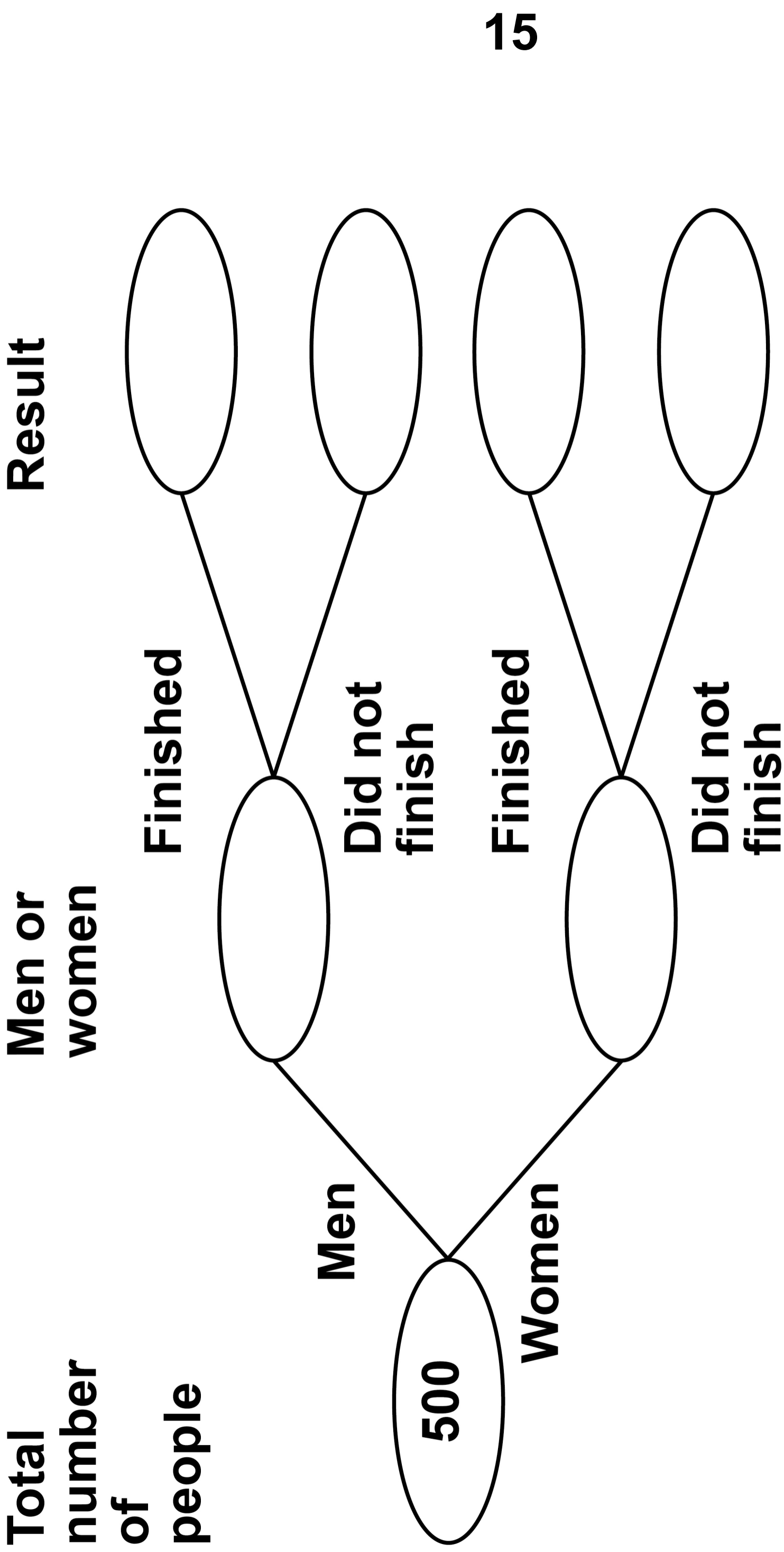
80% of the men finished the race.

30 women did NOT finish the race.

**On the opposite page, complete the frequency tree.
[5 marks]**

14





[Turn over]



10 Put these three distances in order of size.

1.8 kilometres 1600 metres

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

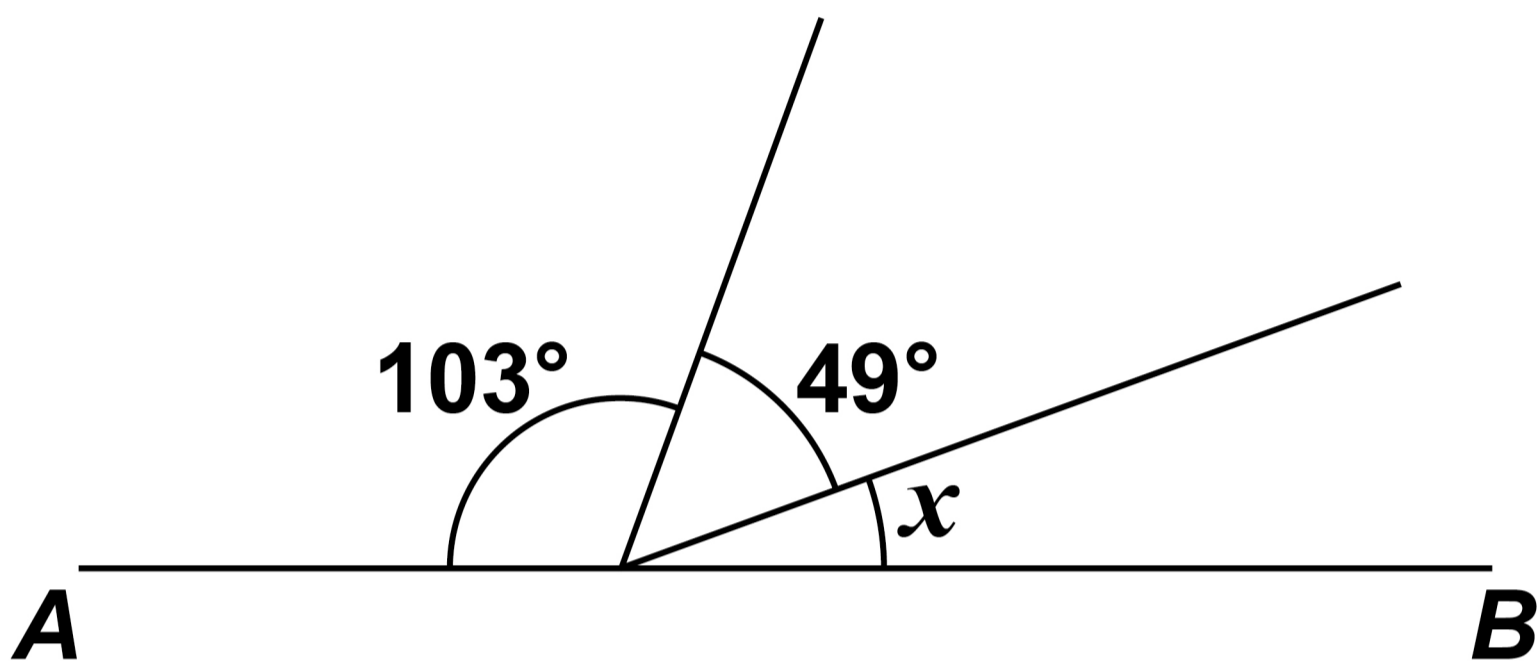
Start with the shortest. [2 marks]

Shortest distance _____

Longest distance _____

11 AB is a straight line.

The diagram is not drawn accurately.



Work out the size of angle x . [2 marks]

Answer _____ degrees

[Turn over]



12 Some players were asked the shirt colour of their football team.

Each answer was either White, Blue, Red or Green.

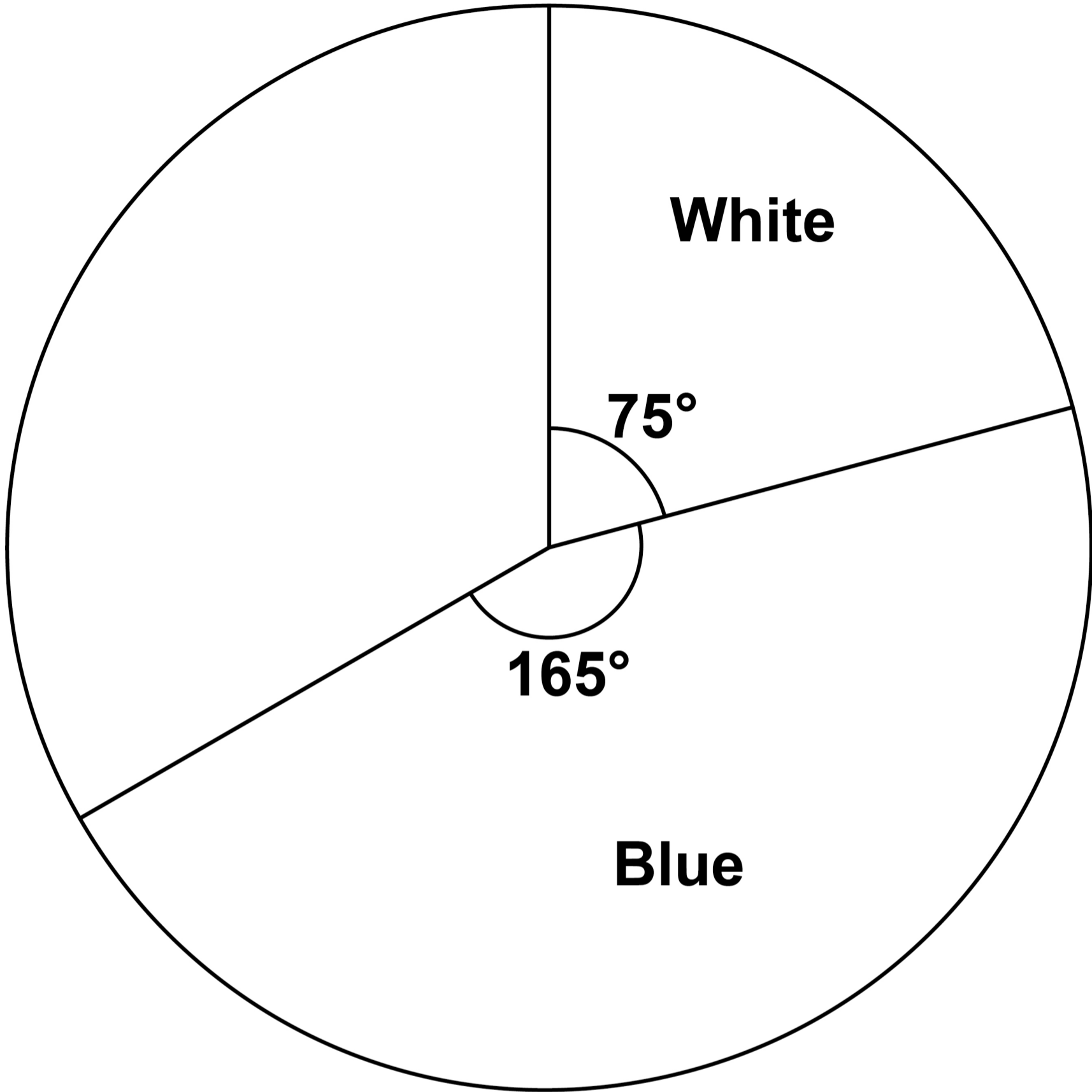
A pie chart is drawn to represent the answers.

Two of the sectors are shown, on the opposite page.

12 (a) The number who answered Red is three times the number who answered Green.

Complete the pie chart. [3 marks]





[Turn over]

BLANK PAGE



12 (b) There were 600 players altogether.

**How many players answered
White? [2 marks]**

Answer _____

[Turn over]



BLANK PAGE

[Turn over]



14 Here are ticket prices for a theme park.

SINGLE TICKETS

Adult £48

Child £26

SPECIAL OFFER TICKETS

1 adult and 2 children £82

2 adults and 2 children £120

14 (a) Freya buys tickets for 3 adults and 4 children.

She pays the cheapest possible total cost.

How much does she save compared to buying all single tickets? [4 marks]



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14 (b) Leroy buys 5 single adult tickets.

He uses a voucher that reduces the price of tickets by a quarter.

**In total, how much does he pay?
[3 marks]**

Answer £ _____

[Turn over]



15 n is negative.

Circle the expression that is **POSITIVE**.
[1 mark]

$n - 1$

n^2

n^3

$\frac{1}{n}$

8



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[Turn over]



16 Here is a formula.

$$y = 3.6x$$

16 (a) On the opposite page, draw the graph of $y = 3.6x$ for values of x from 0 to 20 [2 marks]

In the formula $y = 3.6x$

y is speed in kilometres per hour (km/h)

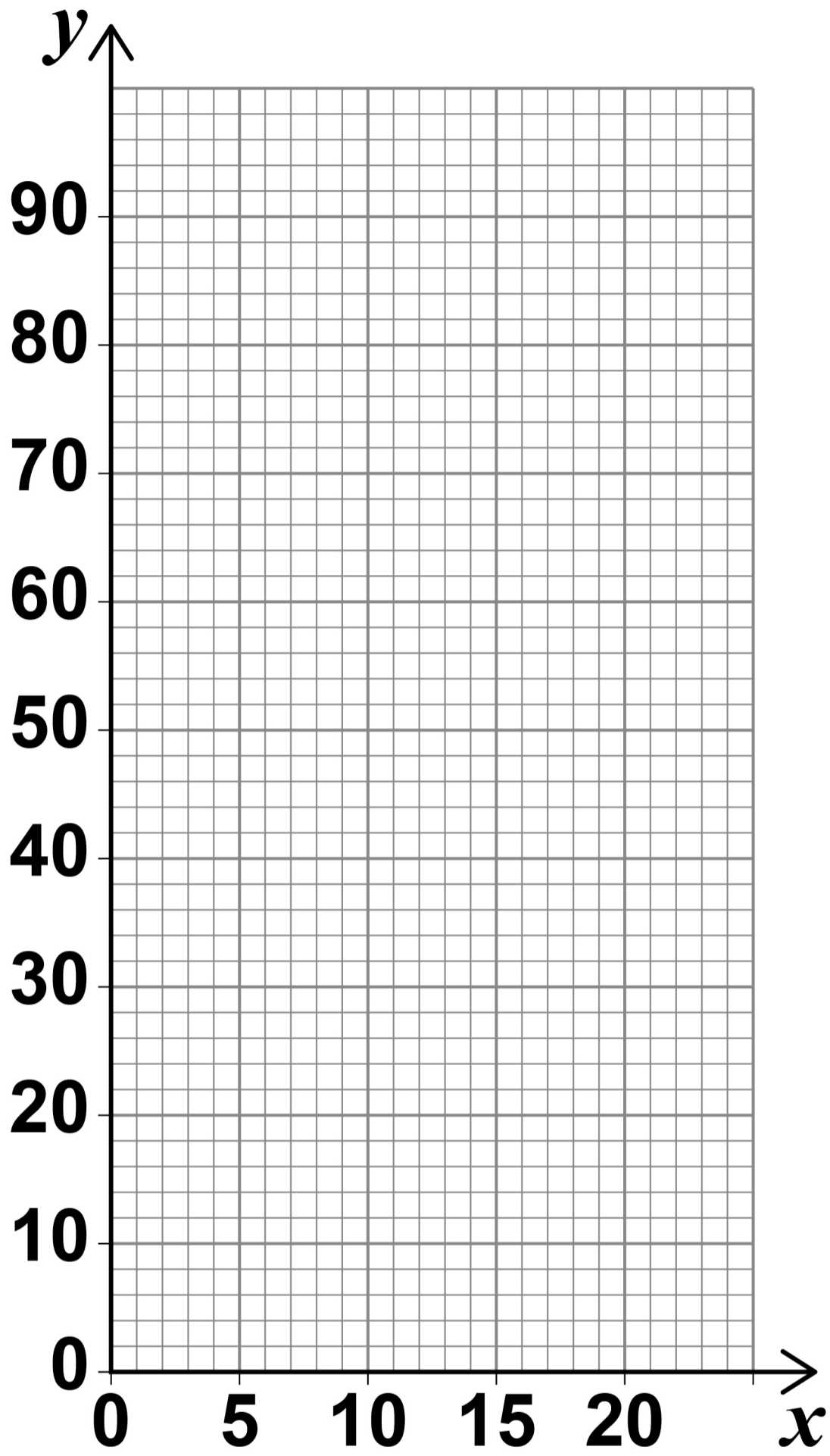
x is speed in metres per second (m/s)

16 (b) Convert 50 km/h to m/s

Give your answer to the nearest whole number. [1 mark]

Answer _____ m/s





[Turn over]



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16 (c) Convert 30 m/s to miles per hour.

**Use 1 mile per hour = 1.61 km/h
[3 marks]**

Answer

_____ **miles per hour**

[Turn over]

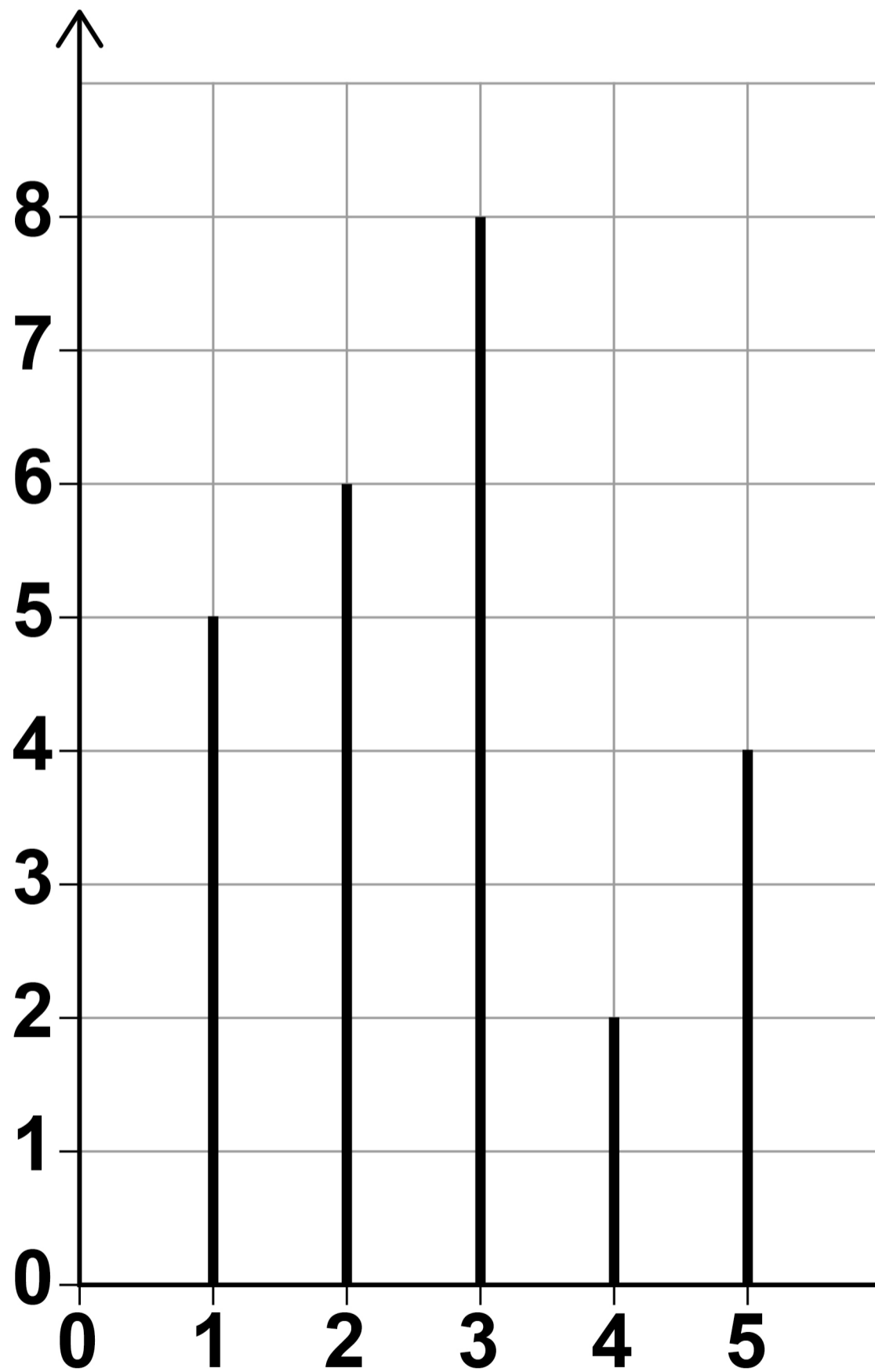
6



- 17 A record was kept of the number of days that 25 students were absent one term.

The chart represents the results.

Number of students



Number of days absent



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17 (b) One of the students is chosen at random.

Work out the probability that the student was absent for LESS THAN 4 days. [2 marks]

Answer _____

[Turn over]

18 Bobbi has these notes.

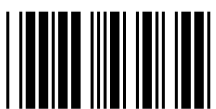
Note	Number of notes
£5	3
£10	x

The total value of her notes is £ T

Write a formula for T in terms of x .
[2 marks]

Answer _____

7

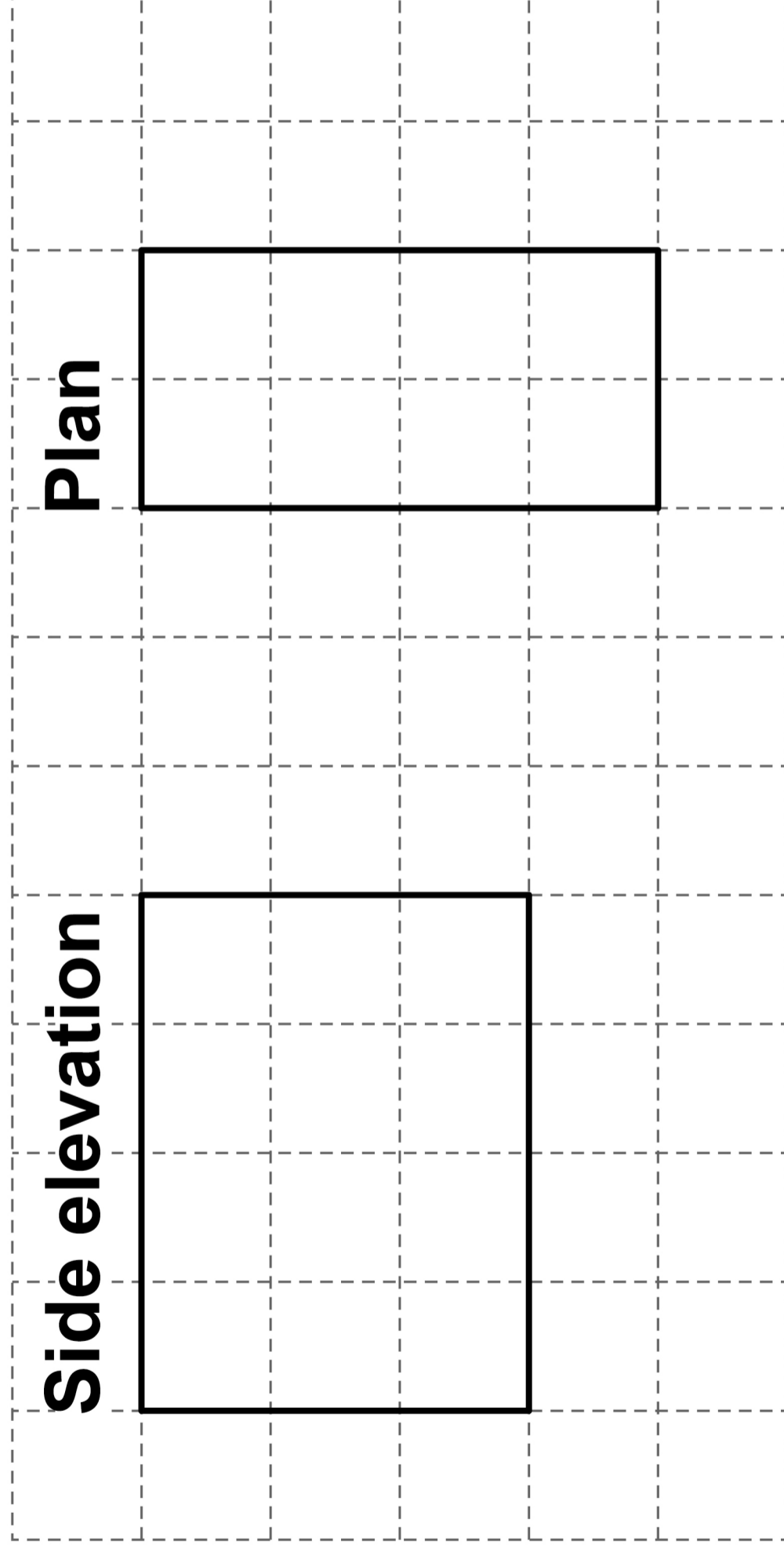


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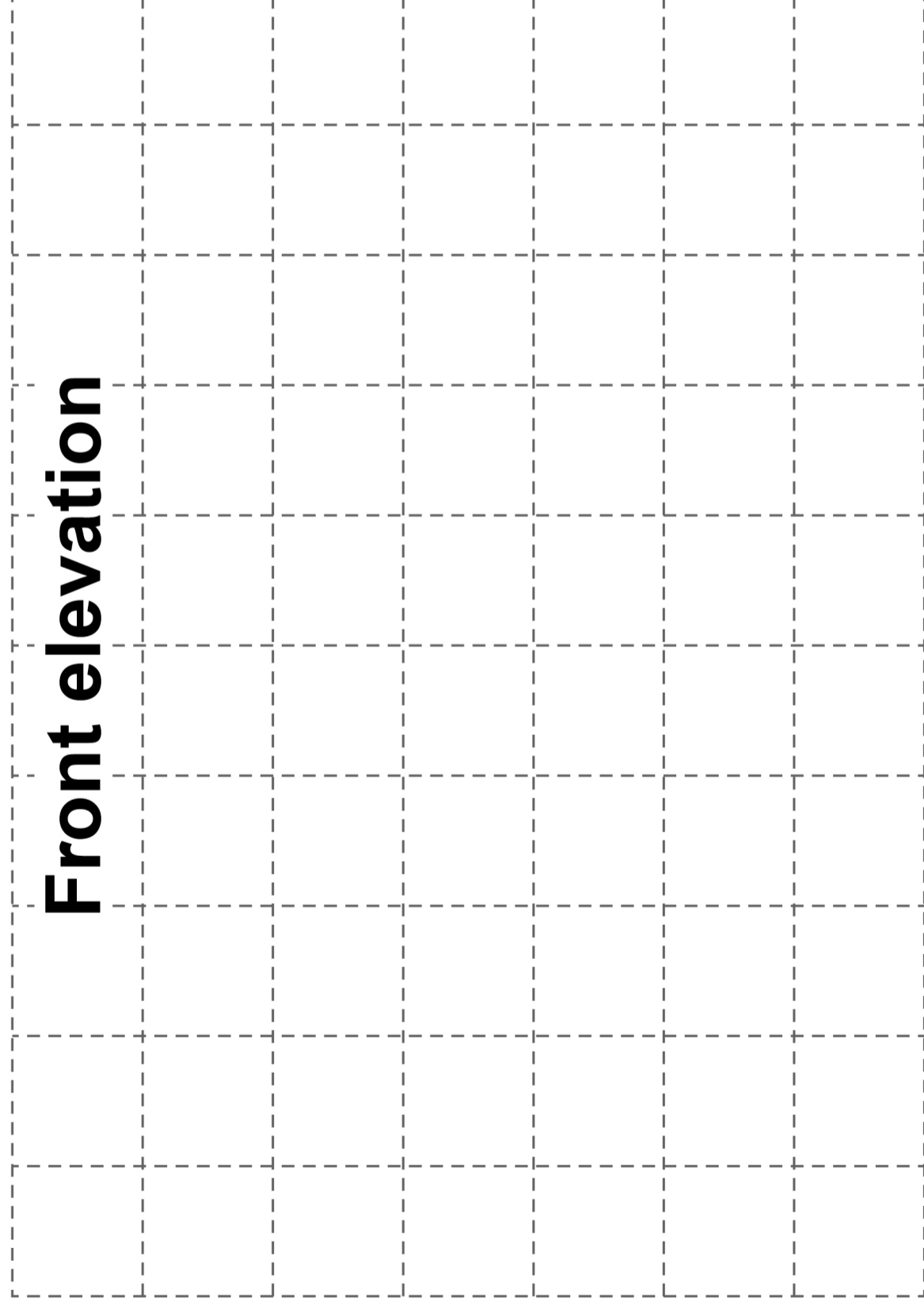
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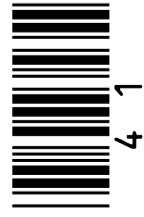
19 The side elevation and plan of a cuboid are shown on the grid.



**Draw the front elevation of the cuboid on this grid.
[2 marks]**



[Turn over]



20 To the nearest 1000, there are 18 000 people at a festival.

20 (a) Write down the minimum possible number of people at the festival.
[1 mark]

Answer _____

20 (b) Write down the maximum possible number of people at the festival.
[1 mark]

Answer _____

21 Circle the equation of the line parallel to $y = 5x + 2$ [1 mark]

$$y = 2x + 5$$

$$y = 5x - 2$$

$$y = -5x + 2$$

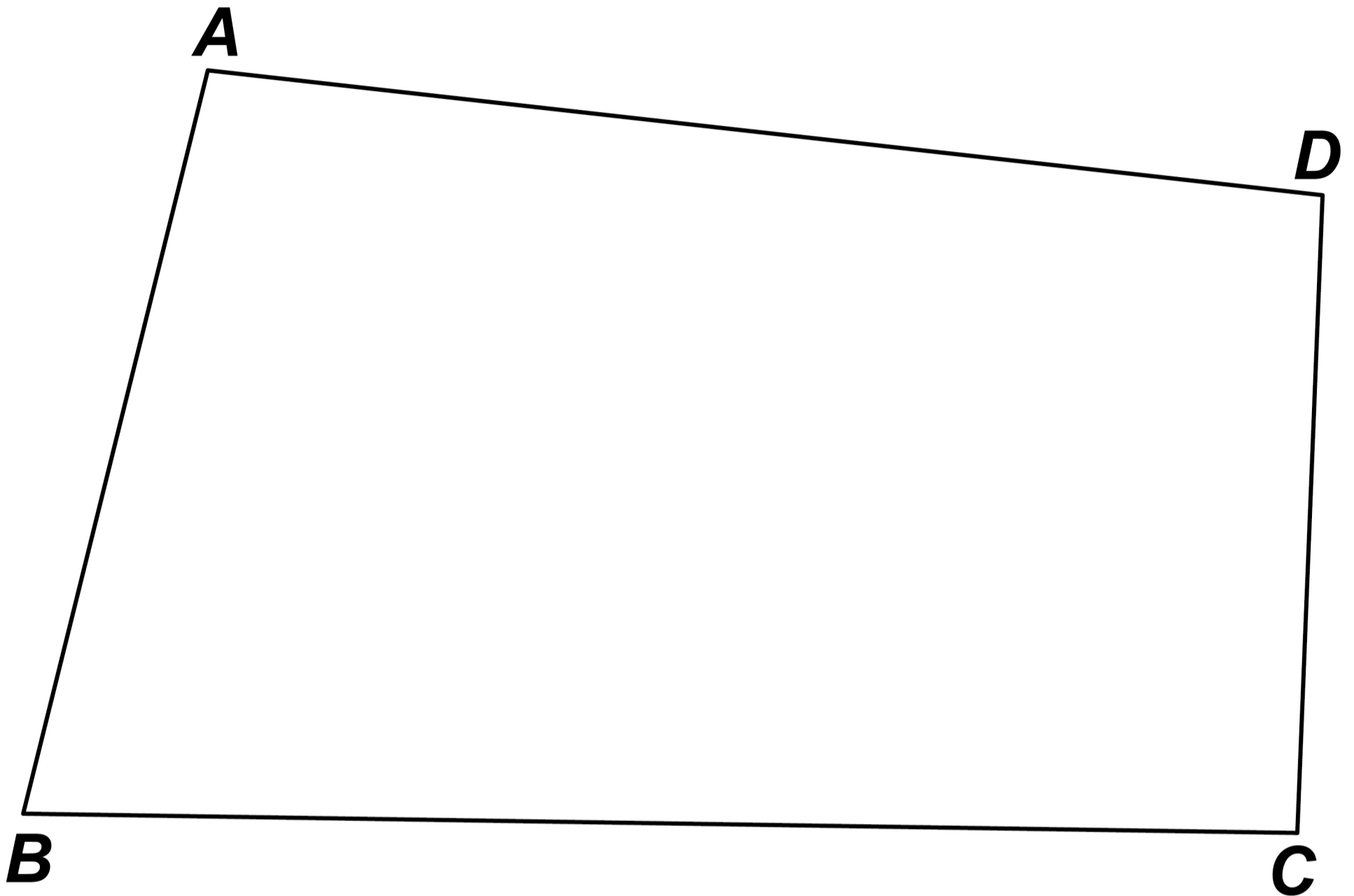
$$y = -2x - 5$$

[Turn over]

5



22 $ABCD$ represents the plan of a field.



There is a path across the field that starts at B

is the same distance from BA and BC .

Using ruler and compasses, show the position of the path. [2 marks]



23 a is two times b .

Circle the ratio $a : b$ [1 mark]

1 : 3

3 : 1

1 : 2

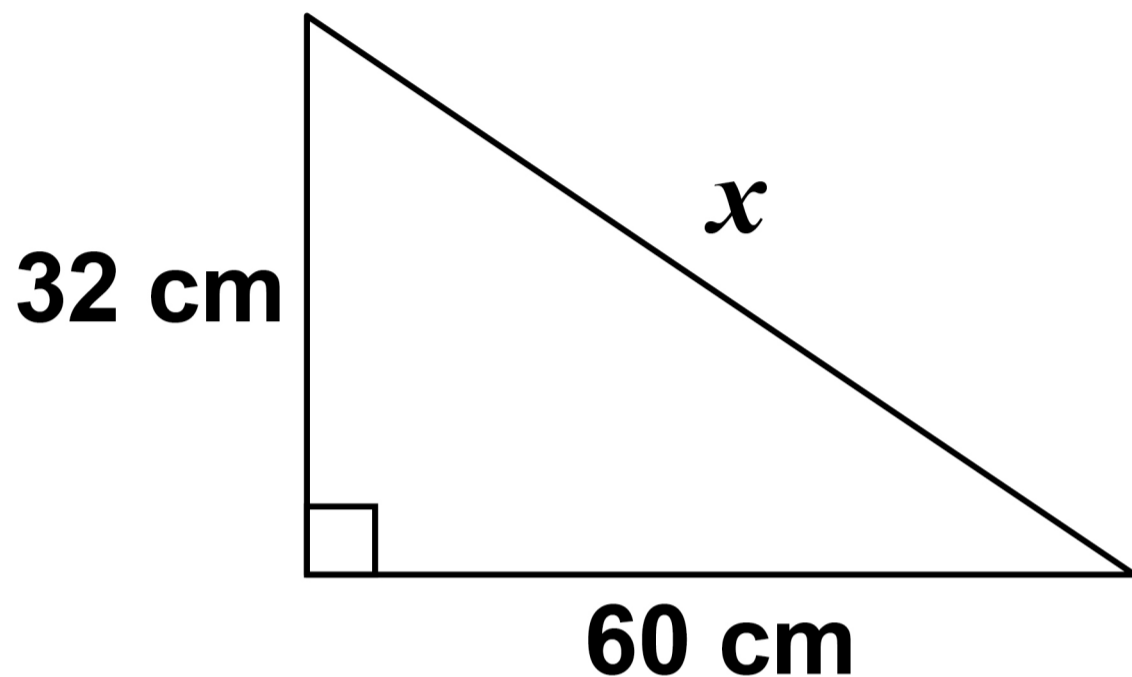
2 : 1

[Turn over]



24 Use Pythagoras' theorem to work out the value of x .

The diagram is not drawn accurately.



[3 marks]

Answer _____ **cm**

6



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[Turn over]



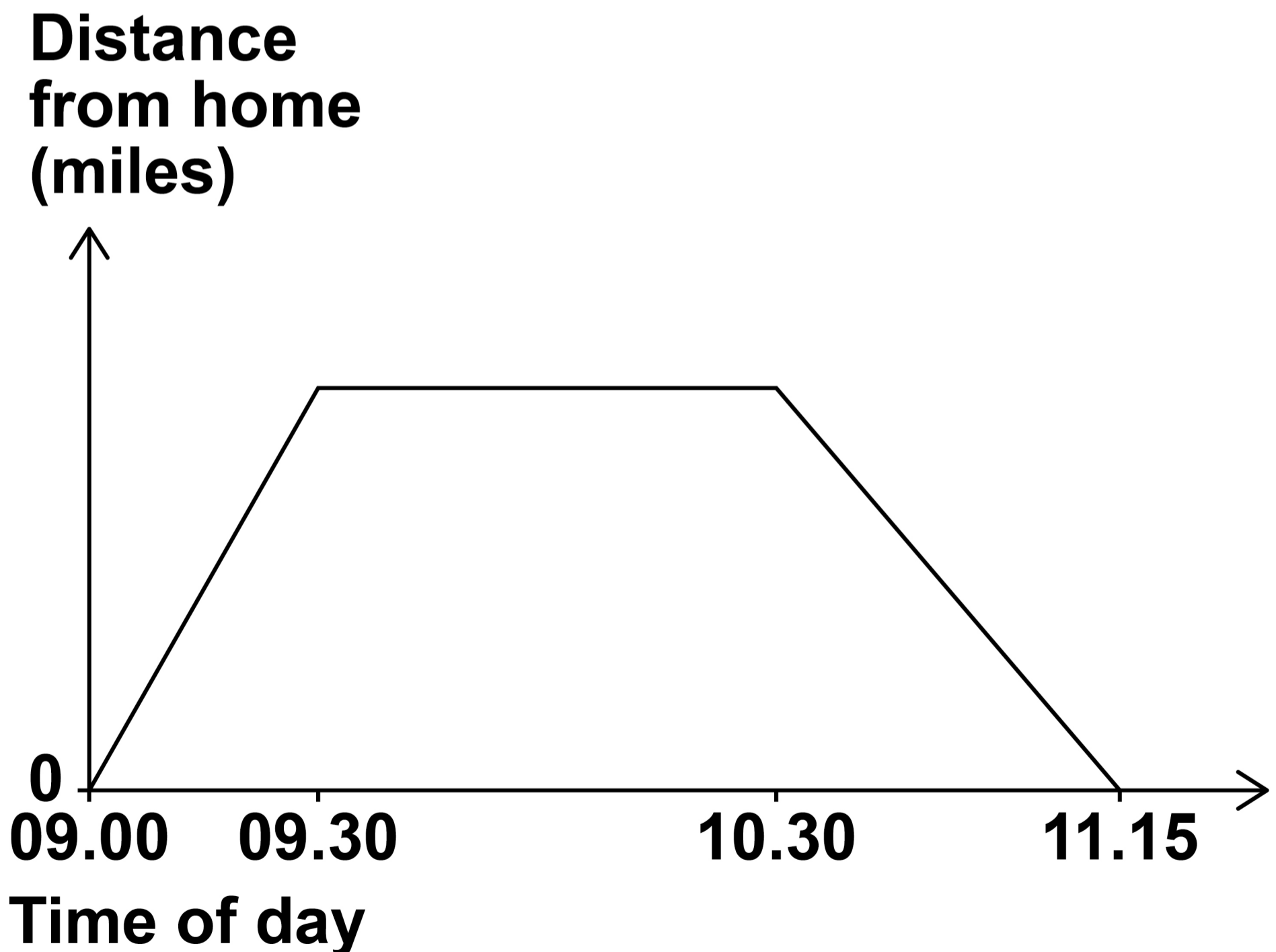
25 Chris visits a library.

He cycles to the library in half an hour at a speed of 12 miles per hour.

He stays at the library for one hour.

He then cycles home.

The sketch graph represents his visit.



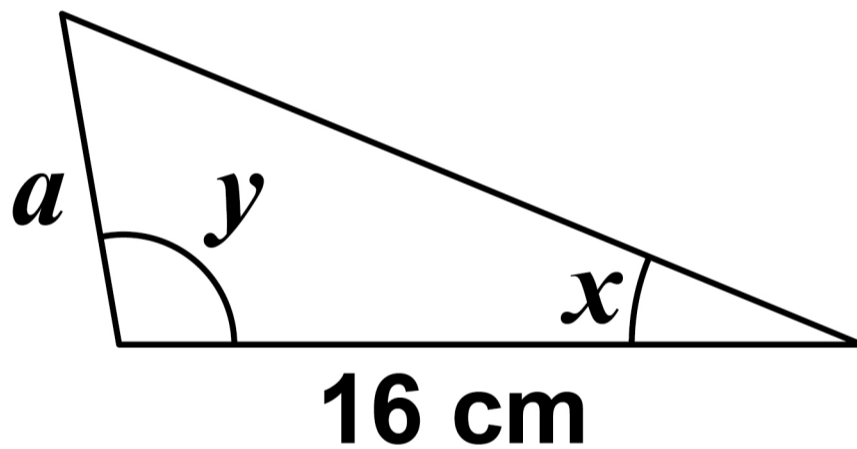
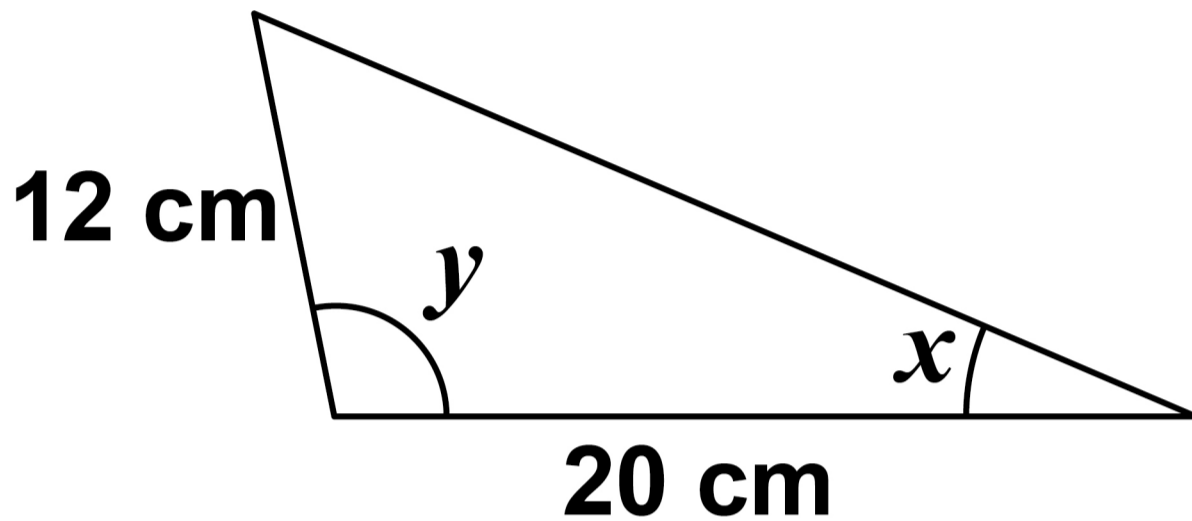
Work out the speed, in miles per hour, at which Chris cycles home. [3 marks]

Answer _____ **mph**

[Turn over]

26 These two triangles are similar.

The diagrams are not drawn accurately.



Work out the value of a . [2 marks]

Answer _____ cm



27 Circle the expression that is equivalent to $(x - 1)^2$ [1 mark]

$x^2 - 1$

$x^2 + 1$

$x^2 - 2x - 1$

$x^2 - 2x + 1$

[Turn over]

6



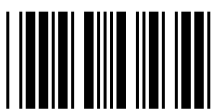
28 Here is some information about 26 houses.

a , b and c are all DIFFERENT numbers.

Number of bedrooms	Number of houses
1	7
2	a
3	b
4	c
5	8

The median number of bedrooms is 3.5

Work out a possible set of values for a , b and c . [3 marks]



a = _____

b = _____

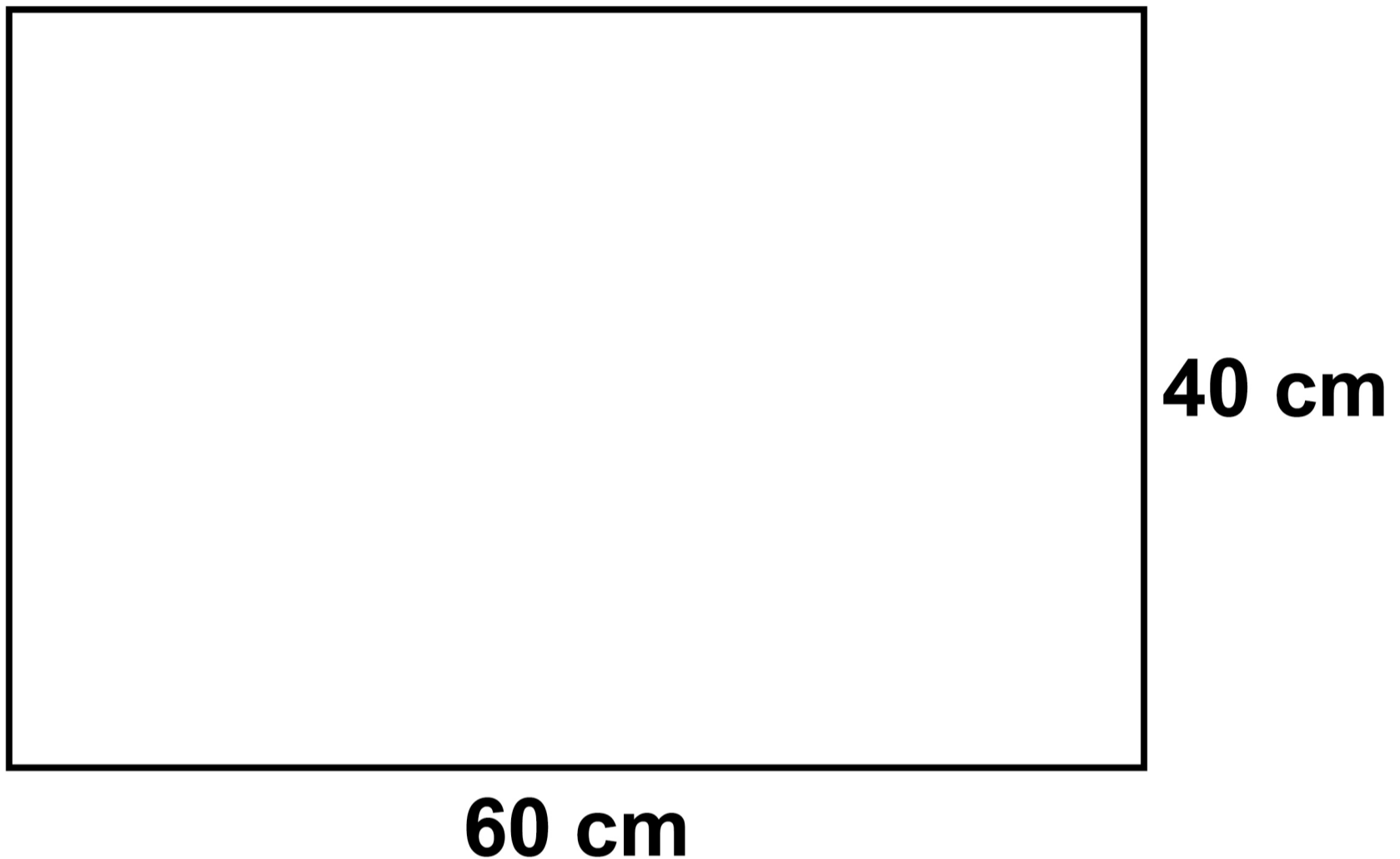
c = _____

[Turn over]



29 A rectangle has length 60 cm and width 40 cm

The diagram is not drawn accurately.



The length decreases by 15%

The width decreases by 10%

Sue says,

“The perimeter decreases by 25% because $15\% + 10\%$ is 25% ”

Is she correct?



30 Expand and simplify fully

$$4(2c + 3) - (5c - 1) \quad [2 \text{ marks}]$$

Answer _____

$$31 \quad c = \begin{pmatrix} 4 \\ 9 \end{pmatrix} \quad d = \begin{pmatrix} 2 \\ -5 \end{pmatrix}$$

Work out $4c + 3d$ [2 marks]

Answer $\left(\quad \right)$

END OF QUESTIONS

4



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For Examiner's Use	
Pages	Mark
4–7	
8–10	
11–13	
14–17	
18–22	
24–28	
30–33	
34–38	
40–43	
44–46	
48–51	
52–55	
56–57	
TOTAL	

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