



PREDICTED PAPER



Video Solutions

Centre Number

Candidate Number

Surname _____

Forename(s) _____

Signature _____

GCSE MATHEMATICS

F

Foundation Tier Paper 3 Calculator Allowed

Monday 7 November 2022

Morning

Time allowed: 1 hour 30 minutes

Student Self Reflection

Topics/Question I need to **revise**

Topics/Questions I need to **learn**

For teacher use

Pages	Mark
2-3	
4-5	
6-7	
8-9	
10-11	
12-13	
14-15	
16-17	
18-19	
20-21	
22-23	
24-25	
TOTAL	



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

Do not write
outside the
box

1 What is 3.1415 to 3 decimal places? [1 mark]

Circle your answer.

3.14

3.141

3.142

3.15

2 Circle the cube number. [1 mark]

3

6

9

27

3 Here is a number line.



Which number is at A?

Circle your answer.

[1 mark]

2.6

2.7

2.8

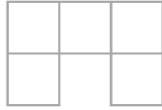
2.9





4

Here is a shape

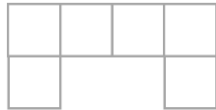


Which shape below is congruent to this shape?

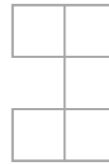
Circle the correct letter.

[1 mark]

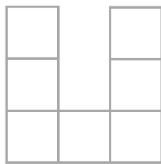
A



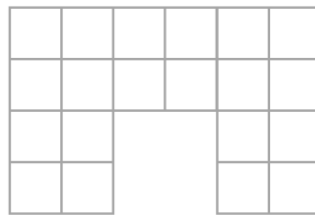
B



C

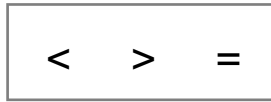


D





5 Here are some symbols



Write one symbol in each box below to make the statements correct. **[2 marks]**
One has been done for you.

$$-5 + 1 \quad \boxed{=} \quad -6 + 2$$

$$-5 \times 2 \quad \boxed{} \quad -5 \times 3$$

$$-7 - 2 \quad \boxed{} \quad -2 - 7$$

6 Luke thinks of two numbers.
One of the numbers is a prime number.
The other number is a multiple of 6.

The sum of his two numbers is 29.

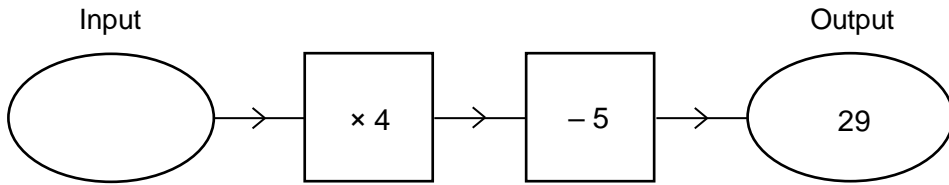
Write down a possible pair of numbers that Luke could be thinking of. **[2 marks]**

Answer _____ and _____





7 (a) Here is a number machine.

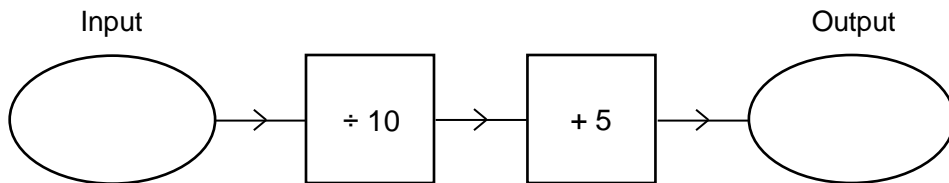


Work out the input.

[1 mark]

Answer _____

7 (b) Here is a different number machine.



The output is a negative number.
Work out a possible input.

[1 mark]

Answer _____

Turn over ►





Do not write
outside the
box

8 (a) Solve $10 + 4x = 46$

[2 marks]

$x =$ _____

8 (b) Lucy solves an equation.
Her working is shown below.

$$\frac{x}{2} + 4 = 10$$

$$x + 4 = 20$$

$$x = 16$$

Explain the mistake that Lucy has made.

[1 mark]

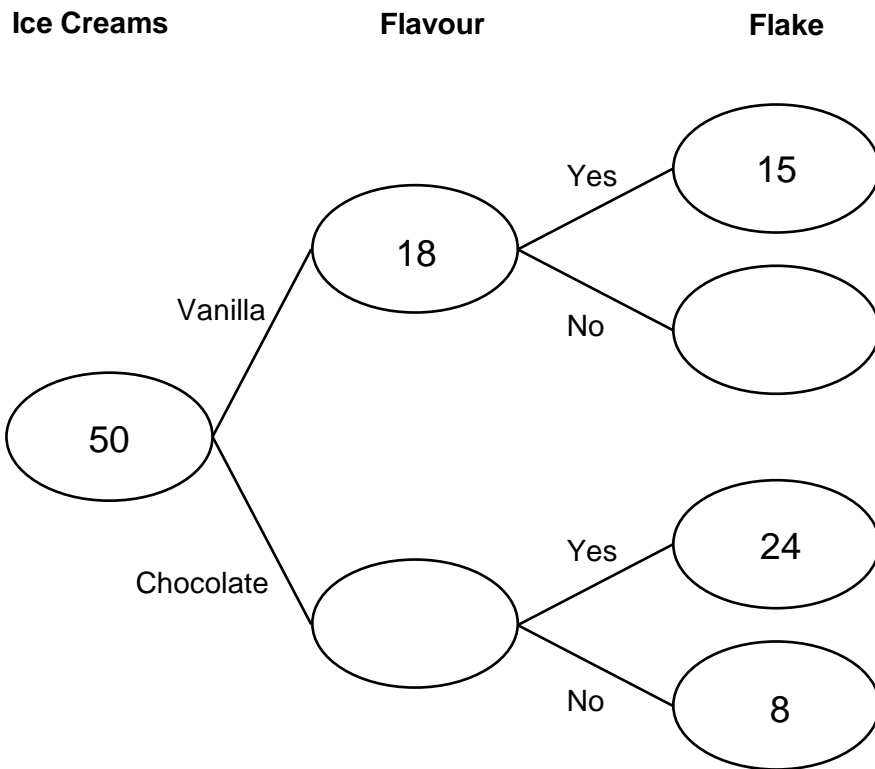




9 50 students are given an ice cream after their maths exam. They can choose either vanilla or chocolate ice cream. They can choose to have a flake or have no flake.

9 (a) Complete the frequency tree

[2 marks]



9 (b) A student is selected at random. What is the probability that the student had a flake with their ice cream? [2 marks]

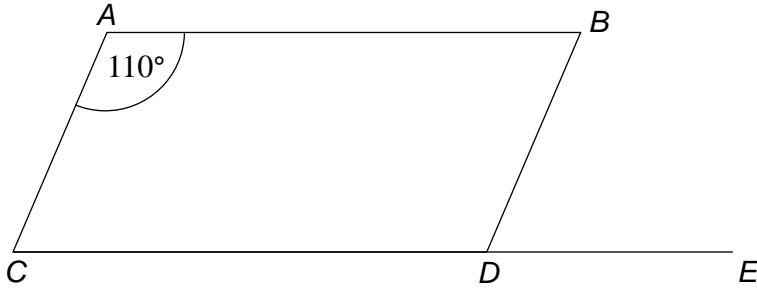
Answer _____

Turn over ►





10 $ABDC$ is a quadrilateral.



AC is parallel to BD .
 AB is parallel to CD .
 CDE is a straight line.
Angle $CAB = 110^\circ$

10 (a) What type of angle is angle CAB ? [1 mark]
Circle your answer.

Acute Right Obtuse Reflex

10 (b) What is the name of quadrilateral $ABDC$? [1 mark]

Answer _____

10 (c) Work out the size of angle BDE . [3 marks]

Answer _____





11 A school fair has 4 games.
The probabilities of winning each of the games are shown below.

Game A	Game B	Game C	Game D
0.3	$\frac{7}{20}$	0.07	34%

Write the games in order of how likely they are to be won.
Start with the **least** likely.

[2 marks]

Answer _____

12 Adam makes cupcakes to sell.
He makes 15p profit on each cupcake that he sells.
In 5 hours he can make 240 cupcakes.

During one week he makes cupcakes for 12 hours.
How much profit does he make from the cupcakes made in 12 hours.

[3 marks]

£ _____

Turn over ►





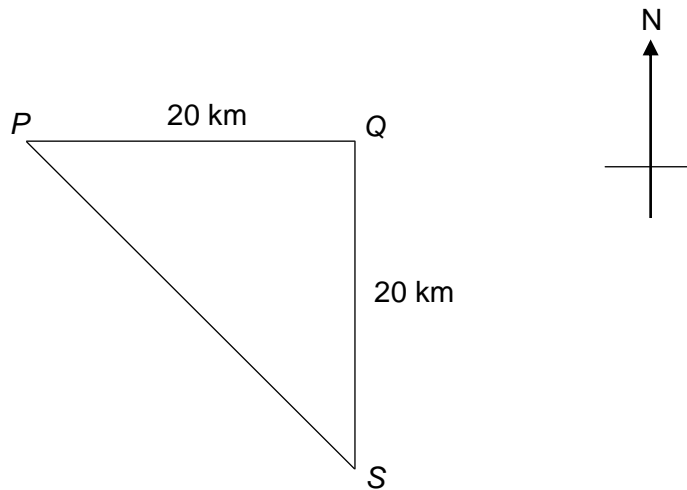
13 A ship completes a journey in 3 parts, starting at point P .

Part 1: Travel 20 km East to reach point Q .

Part 2: Travel 20 km South to reach point R .

Part 3: Return directly back to the starting point, P .

A diagram of the ship's journey is shown below.



13 (a) Which direction is the ship travelling in part 3 of the journey?

[1 mark]

Answer _____



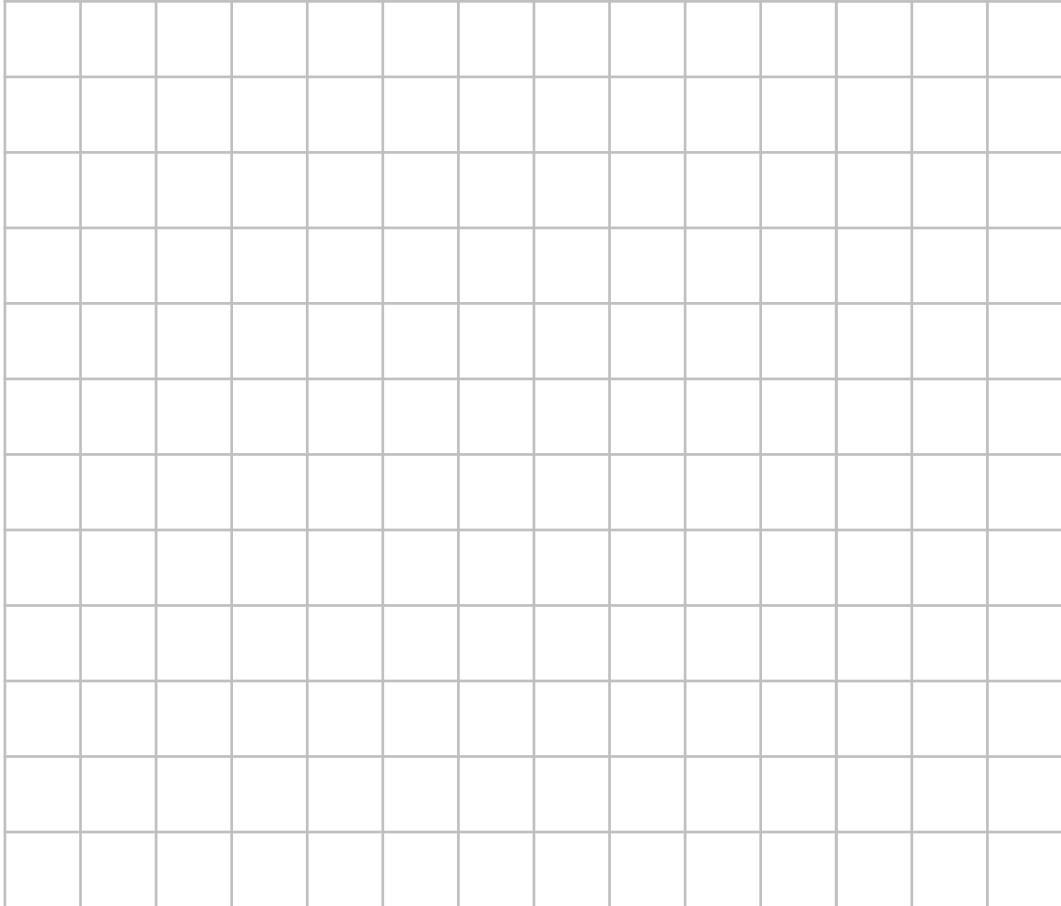


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13 (b) Draw a scale diagram of the ship's journey on the grid below.

[2 marks]

Use the following scale: 1 cm represents 2 km



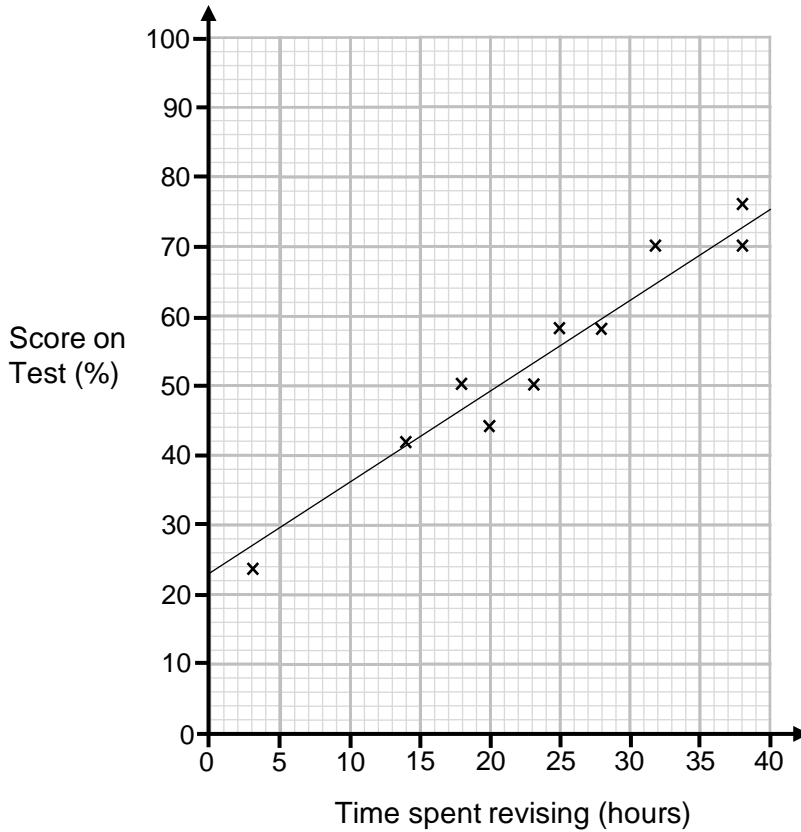
3

Turn over ►





14 The scatter graph shows time revising and the test scores (%) of some students.



14 (a) What type of correlation does the scatter graph show? [1 mark]

Answer _____

14 (b) Use the graph to estimate the test score of a student who revised for 10 hours. [1 mark]

Answer _____ %





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- 15 1 pound (£) = 1.16 Euros (€)
1 Croatian Kuna (kn) = 0.13 Euros (€)

Convert £400 into Croatian Kuna (kn)
Give your answer to the nearest integer.

[4 marks]

Answer _____ kn

- 16 The first 5 terms of a linear sequence are shown below.

6 11 16 21 26

Work out the 100th term of the sequence.

[2 marks]

Answer _____

$\frac{\quad}{8}$

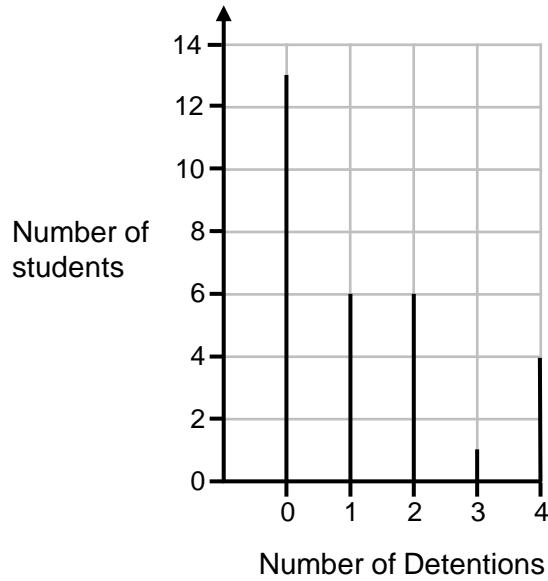
Turn over ►





17 A class of 30 students were asked how many detentions they received this week.

The chart below shows the results.



17 (a) Write down the modal number of detentions. [1 mark]

Answer _____

17 (b) Work out the mean number of detentions. Give your answer to 1 decimal place. [3 marks]

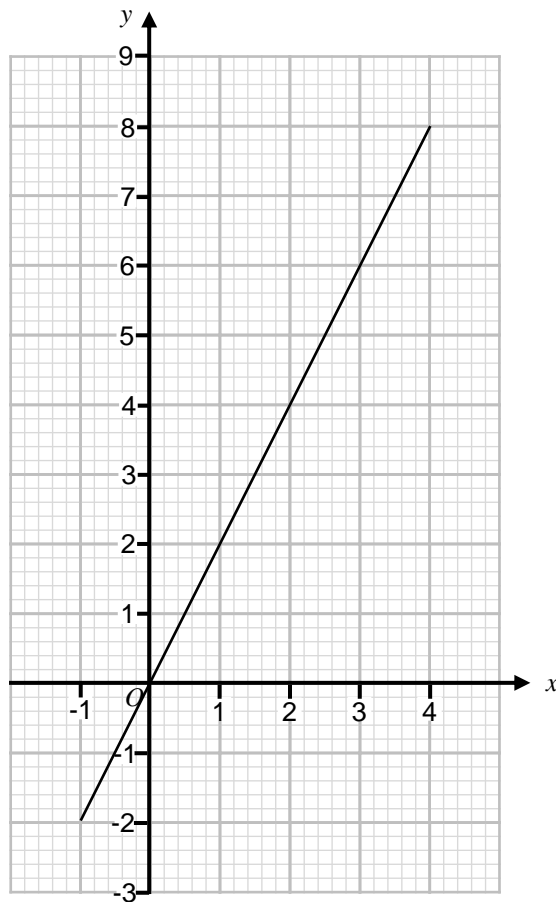
Answer _____



18 The graph of $y = 2x$ for x values from -1 to 4 is shown on the grid.

18 (a) On the grid, draw the graph of $y = 5 - x$ for x values from -1 to 4

[3 marks]



18 (b) Use your graph to solve $5 - x = 2x$ to 1 decimal place.

[1 mark]

$x =$ _____

$\frac{\quad}{8}$

Turn over ►





19 A hotel swimming pool has a capacity of 27 000 litres.

The pool is initially empty but then filled by a 2 pumps.

Each pump adds 230 litres of water per minute.

Show that the pool can be filled in under 1 hour using the 2 pumps. **[3 marks]**

20 Grace has three different metal blocks, A, B and C.

Each block has the same mass.

	Block A	Block B	Block C
Density (g/cm ³)	20	40	
Volume (cm ³)	4		10

Complete the table. **[2 marks]**



Do not write
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21 (a) Here is a rule for a sequence.

After the first two terms, each term is the sum of the previous two terms.

The first five terms are 6 a b 24 39

Work out the values of a and b . [2 marks]

$a =$ _____

$b =$ _____

21 (b) Is the number 3001 in the sequence?
Explain your answer fully. [1 mark]

Turn over ►



Do not write
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22 Some students from different year groups were given a maths problem to try.
The table below shows information about how many were correct or incorrect.

	Year 7	Year 9
Correct Answer	12	10
Incorrect Answer	18	30
Relative Frequency of Correct Answers		0.25

22 (a) Complete the table. **[1 mark]**

22 (b) 60 Year 11 students also did the maths problem. **[2 marks]**

The relative frequency of correct answers for Year 11 was the same as the relative frequency of correct answers for Year 9.

Work out how many Year 11 students gave a correct answer.

Answer _____



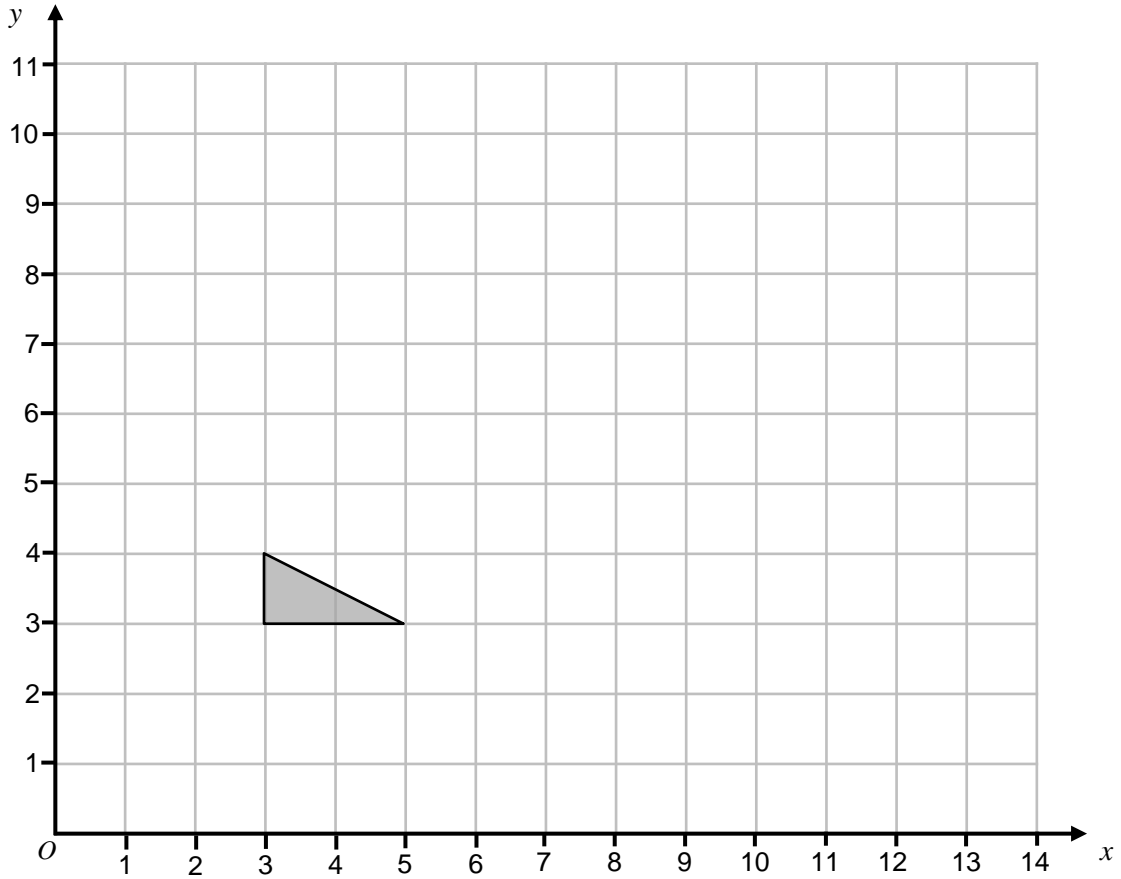


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23

Enlarge the triangle by scale factor 3, about the point (1,1)

[3 marks]



$\frac{\quad}{6}$

Turn over ►





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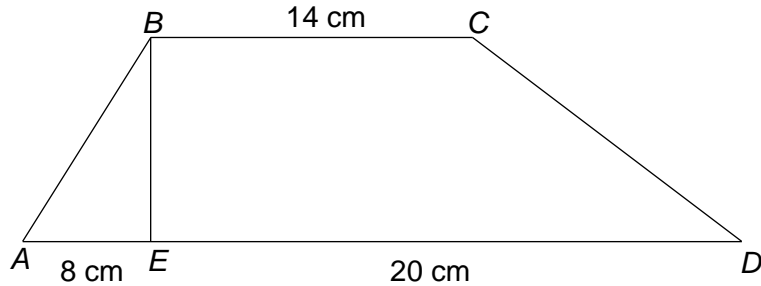
24

$ABCD$ is a trapezium.

$BC = 14$ cm

$AE = 8$ cm

$ED = 20$ cm



The area of triangle ABE is 40 cm²

Work out the area of trapezium $ABCD$.

[4 marks]

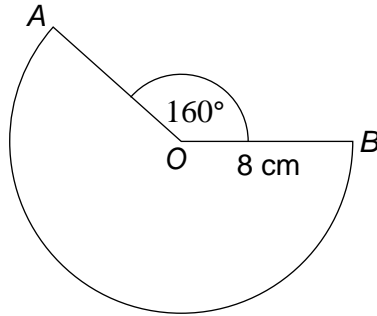
Answer _____ cm²





Do not write outside the box

25 AOB is a sector.



Work out the length of arc AB .
Give your answer to 3 significant figures.

[3 marks]

Answer _____ cm

$\frac{7}{7}$

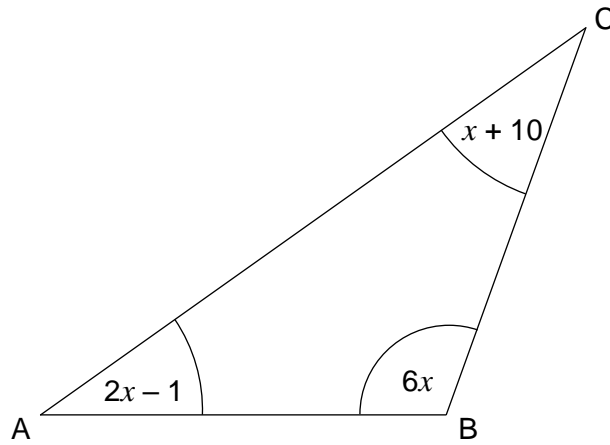
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26 Triangle ABC is shown below.



Not drawn
accurately

Work out the value of x

[3 marks]

$x =$ _____





Do not write
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27

Jo and her dog both run 400 metres.
Jo's dog runs at an average speed of 10 m/s.

The ratio of Jo's dog's average speed to Jo's average speed is 4 : 1

Work out how many seconds it takes Jo to run the 400 metres.

[3 marks]

Answer _____ seconds

$\frac{\quad}{6}$

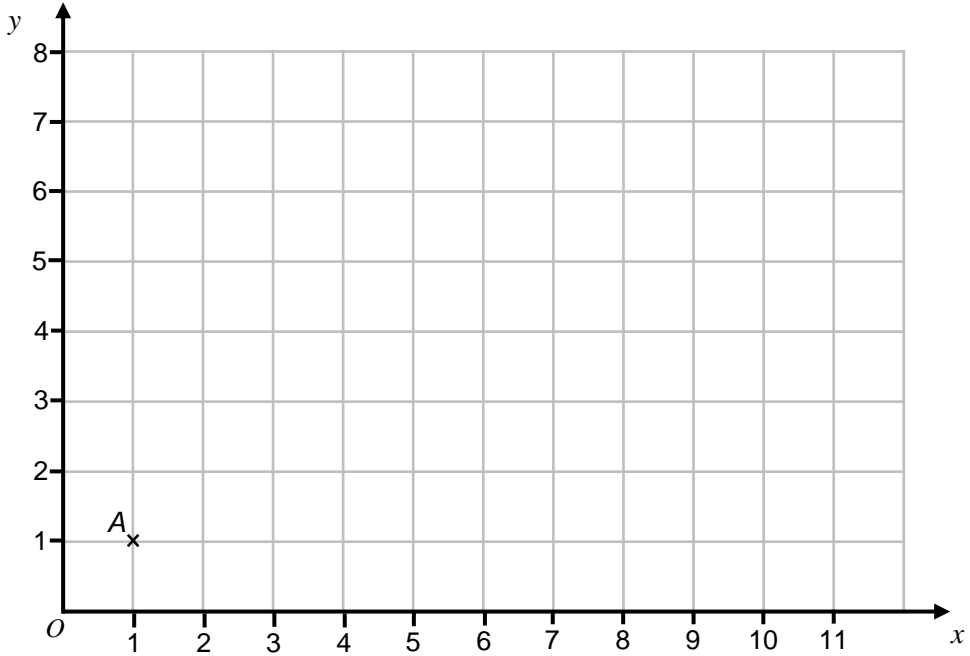
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28



Point B lies on the line $x = 9$

The gradient of the line AB is $\frac{1}{2}$

Find the coordinates of point B .

[3 marks]

Answer (_____ , _____)





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29 a, b and c , are integers with $a < b < c$.

$$a = 24.$$

a is equal to $\frac{3}{8}$ of c .

The mean of a, b and c is 40.

Work out the value of b .

[4 marks]

$$b = \underline{\hspace{10em}}$$

END OF QUESTIONS

$\frac{7}{7}$

