



ENTRANCE EXAMINATION 2025

MATHEMATICS – YEAR 1

Time allowed: 1 hour and 15 minutes

General Instructions:

- Answer ALL questions in your question paper.
- Show all necessary working on the question paper in the spaces provided and write your answers in the appropriate places.
- The marks for each question are given at the end of the question.
- There are 30 questions in this paper.
- The total mark is 100.
- If you cannot do a question, move to the next one so you do not lose time.

- **CALCULATORS ARE NOT ALLOWED**

- **DO NOT WRITE IN THE RIGHT-HAND MARGIN**

GOOD LUCK!

1. Draw lines to match the missing numbers with the correct equation.

<i>Equations</i>	<i>Missing numbers</i>
$8 + \dots \times 2 = 12$	8
$5 \times \dots - 7 = 8$	2
$\dots \div 2 + 6 = 10$	3

(2) Q1

(Total 2 marks)

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2. Solve the following.

(a) $\frac{20 \times 24}{2 \times 0 + 2 \times 4}$

Answer: (2)

(b) $\left(\frac{1}{2} - \frac{3}{7}\right) \div 2 \frac{6}{28}$

Answer: (3) Q2

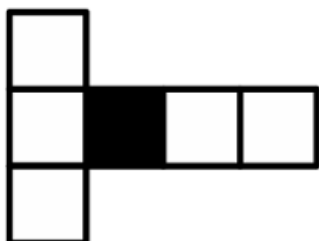
(Total 5 marks)

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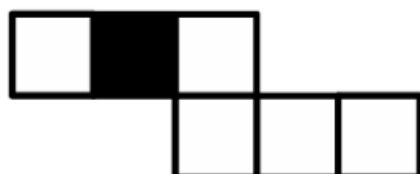
3. Each net below folds to makes a cube.

Shade the square that will be opposite the black square, when the net is folded into a cube.

(a)



(b)



(2) Q3

(Total 2 mark)

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4. If $a = 12$, complete and solve the equations that follow.

(a) $a - 6 =$

Answer: (1)

(b) $3 \times a + 7 =$

Answer: (1)

(c) $3 - (a \div 4) =$

Answer: (1) Q4

(Total 3 marks)

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5. Here is the start of a number pattern:

28 25 22 19 16 13 10

(a) From the numbers in the list above, write down

(i) an even number

Answer: (1)

(ii) the product of 2 and 11

Answer: (1)

(iii) a prime number

Answer: (1)

(iv) a square number

Answer: (1)

(b) Write down the next two numbers in the pattern.

Answer: , (2)

(c) If you carry on the pattern, which will be the first number below zero?

Answer: (1) Q5

(Total 7 marks)

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6. Max has more than 4 apples but fewer than 7 apples.

Alex has more than 5 apples but fewer than 8 apples.

How many apples do Max and Alex have altogether? Circle all the possible values.

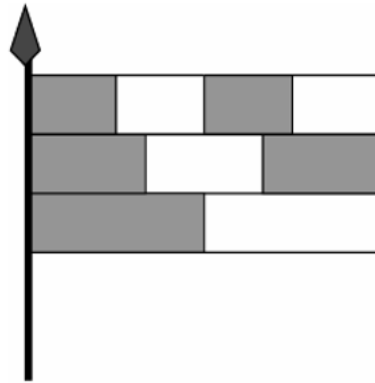
4 5 6 7 8 9 10 11 12 13 14 15

(2) Q6

(Total 2 marks)

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7. A flag consists of three stripes of equal width, which are divided into two, three, and four equal parts, as shown in the picture.
What fraction of the flag's area is shaded?



Answer: (3) Q7

(Total 3 marks)

8. (a) Complete the table below.

Insert a decimal point in each number and add zeros where necessary.
An example has been done for you.

Given number	Place the decimal point correctly, such that	Correct Number
2843	The digit 8 represents tenths.	2.843
1385	The digit 8 represents tenths.	
57896	The digit 6 represents hundredths.	
7896	The digit 9 represents thousandths.	

(3)

- (b) Mr. Adam has 79.5 m of wire to fence a square plot.

What is the length of one side of the plot if he has 3.5 m of wire left?

Answer: m (2) Q8

(Total 5 marks)

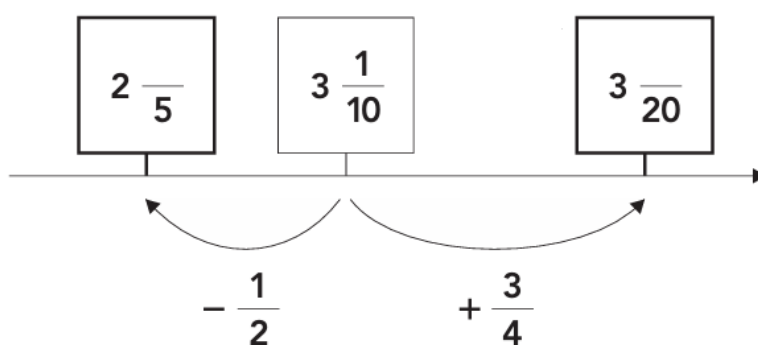
9. (a) Find the unknown numbers, to make the fractions equivalent.

$$\frac{8}{10} = \frac{k}{25} = \frac{0.4}{y} = \frac{a}{100} = \frac{24}{b}$$

Answer: $k = \dots\dots\dots$, $y = \dots\dots\dots$, $a = \dots\dots\dots$, $b = \dots\dots\dots$ (2)

(b) The diagram shows part of a number line.

Two of the fractions are not complete. Write the missing numerators.



Answer: $\dots\dots\dots$, $\dots\dots\dots$ (3) Q9

(Total 5 marks)

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10. In a class 56% of the pupils are girls.

What is the smallest possible number of pupils in the class?

Answer: $\dots\dots\dots$ (2) Q10

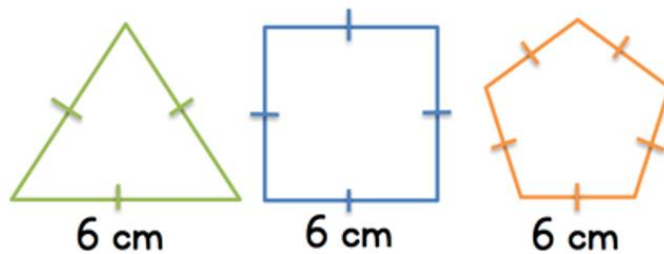
(Total 2 marks)

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11. (a) A mosaic consists of 252 tiles of various shapes.
For every 12 squares, there are 6 triangles, 4 hexagons, and 2 parallelograms.
How many triangles are there in the entire mosaic?

Answer: triangles (2)

- (b) What is the mean perimeter of the shapes below?



(The diagrams are not drawn to scale)

Answer: cm (2) Q11

(Total 4 marks)

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12. Fill in the box with a digit so that the resulting number is exactly divisible by the number or the numbers next to it.

(a) 6 4 3 with 4

(b) 6 4 3 with 3 and 5

(2) Q12

(Total 2 marks)

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13. (a) Subtract $20 + (1 \times 7)$ from $(20 + 1) \times 7$

Answer: (2)

(b) Put a tick (✓) in the correct box for each calculation.

You do not need to find the exact answer. The first one has been done for you.

	less than 1000	equal to 1000	more than 1000
$8.9 \times 9.9 \times 11.9$			✓
$(786 - 387) \div 0.41$			
$95.4 + (91 \times 9.95)$			
$12.5 \times (21.1 + 58.9)$			

(2)

(c) Write the letter that corresponds to each decimal number based on the number line below.



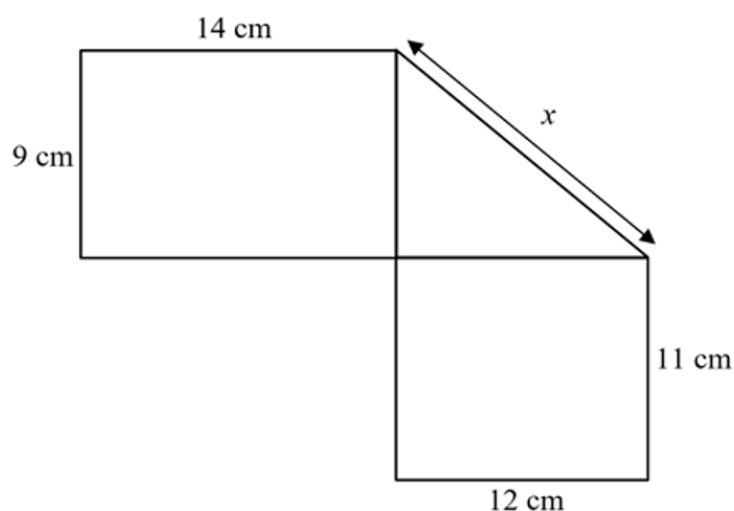
0.55	0.62	0.336	0.458	0.52	0.38	0.579

(3) Q13

(Total 7 marks)

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14. The compound shape below is made up of two rectangles and a right-angled triangle.



(The diagram is not drawn to scale)

- (a) The outer perimeter of the compound shape is 86 cm.
What is the value of x ?

Answer: $x = \dots\dots\dots$ cm (2)

- (b) What fraction of the total area of the compound shape is the area of the triangle?
Give your answer in its simplest form.

Answer: $\dots\dots\dots$ (2) Q14

(Total 4 marks)

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15. My cat drinks two thirds of a bottle of milk a day. How many days will 6 bottles last?

Answer: days (2) Q15

(Total 2 marks)

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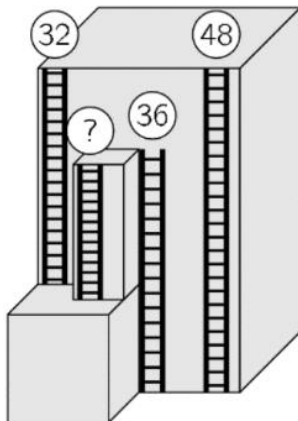
16. Emma thinks of two **prime** numbers.
She adds the two numbers. Her answer is 36.
Write **two** possible pairs of prime numbers Emma could be thinking of.

Answer: (2) Q16

(Total 2 marks)

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17. On a tall building there are 4 fire escape ladders, as shown in the picture below.
The height of each ladder is shown on the top.
What is the height of the shortest ladder?



Answer: (2) Q17

(Total 2 marks)

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18. Below are different measurements.

3 cm	$\frac{3}{10000}$ km	30 mg	0.003 kg
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Match each measurement below to its equivalent amount.

3 g =

30 mm =

0.3 m =

$\frac{3}{100}$ g =

(2) Q18

(Total 2 marks)

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19. Write **True** or **False** next to each mathematical statement.

(a) $5^2 = 5 \times 5$ _____

(b) $0 \div 13 = 13$ _____

(c) $3^3 = 9$ _____

(d) $7^2 = 2 \times 7$ _____

(e) $4^0 \times 6^2 = 2^2 \times 3^2$ _____

(3) Q19

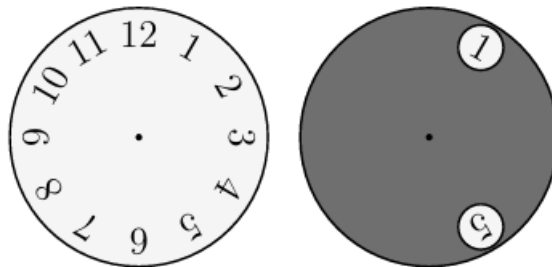
(Total 3 marks)

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20. (a) What percent of a 24-hour day did Paul spend on homework if he started at 7:53 pm and finished at 9:05 pm?

Answer: % (3)

- (b) A grey circle with two holes in it is placed on top of a clock face, as shown. The grey circle is turned around its centre so that an 8 appears in one hole. Which two numbers could be seen in the other hole?



Answer: , (2) Q20

(Total 5 marks)

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21. There are four unknown positive whole numbers.
The mean of the two smallest numbers is 3.
The mean of the three smallest numbers is 5.
The mean of all four numbers is 7.
All the numbers are different and odd. What are the four numbers?

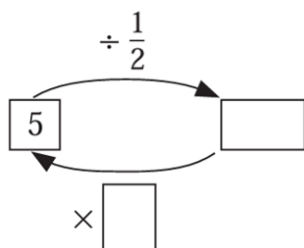
Answer: , , , (2) Q21

(Total 2 marks)

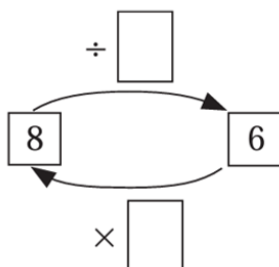
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22. Fill in the boxes in each diagram to complete the calculations.

(a)



(b)



(3) Q22

(Total 3 marks)

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23. Magic trees grow in a magic garden.

Each tree has either 6 pears and 3 apples, or 8 pears and 4 apples.

There are 25 apples in the garden. How many pears are there in the garden?



Answer: pears (2) Q23

(Total 2 marks)

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24. Express the relationship between the quantities in the table below using **ratios**.
Give your answer in its simplest form.

	Ratio
A right angle to the sum of angles in a triangle	
The Mondays to the total number of days in four weeks	
The perimeter of the square to its side	

(3) Q24

(Total 3 marks)

25. A rectangle is cut into two pieces.



(The diagram is not drawn to scale)

The area of **A** is $\frac{5}{8}$ of the area of the rectangle.

The area of **A** is 28 cm^2 greater than the area of **B**.

What is the area of the rectangle?

Answer: cm^2 (3) Q25

(Total 3 marks)

26. Maria leaves her house at 8 am and walks to the library at a speed of 5 km per hour. The library is located 4 km away from her house. After 15 minutes, her brother Alex realises that Maria forgot her notebook at home. He takes his bicycle and starts following her on the same path at a speed of 10 km per hour.

(a) How far has Maria walked in the first 15 minutes?

Answer: km (2)

(b) How far will they be from the library when Alex catches up with Maria?

Answer: km (2) Q26

(Total 4 marks)

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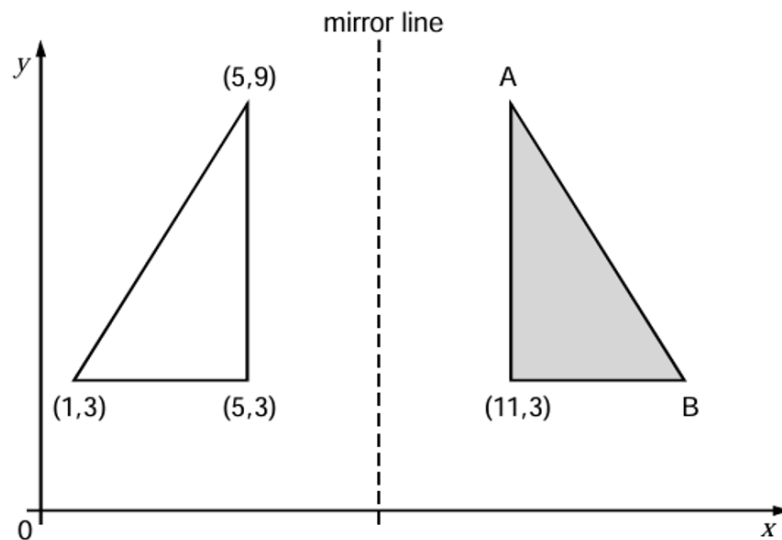
27. The pie chart shows the lunch chosen by 180 children at a primary school.
90 children chose lasagne.
The number of children who chose pizza is double the number of children who chose fish.
How many children chose fish?



Answer: children (2) Q27

(Total 2 marks)

28. The shaded triangle is a reflection of the white triangle in the mirror line.



Write the coordinates of point A and point B .

Answer: A(,) B(,) (2) Q28

(Total 2 marks)

29. Gru and his minions have had a very busy Christmas period delivering presents on behalf of Santa. To speed things along he uses his minions to deliver the presents.
Each minion can deliver 7 presents per hour.



- (a) How many presents can one minion deliver in 3 hours?

Answer: (1)

- (b) How many presents can four minions deliver in one hour?

Answer: (1)

- (c) Dave the minion has been given 161 presents.
How long will it take him to deliver the presents?

Answer: hours (1)

- (d) At 1 am on Christmas day there is still a total of 1820 presents to deliver.
How many minions will Gru need if he has 5 hours to complete the delivery?

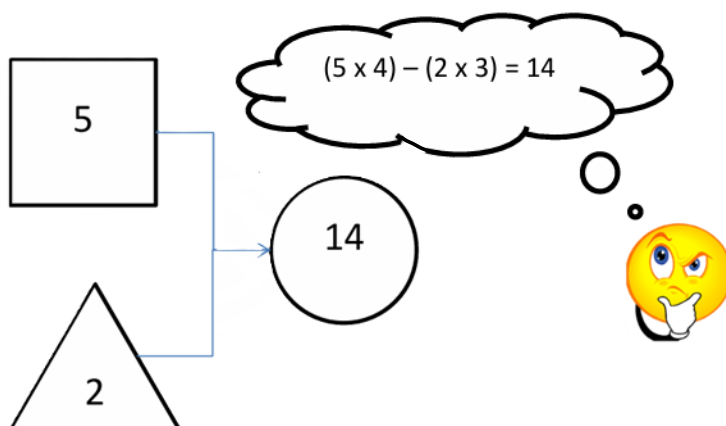
Answer: minions (2) Q29

(Total 5 marks)

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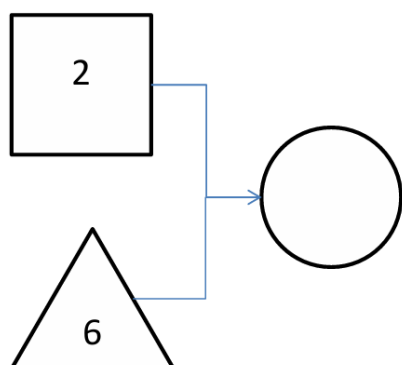
30. To find the number in the circle, multiply the number in the triangle by 3, multiply the number in the square by 4 and find the difference.

Example:

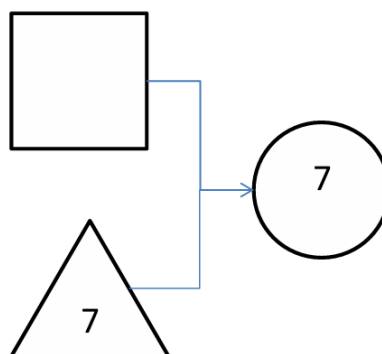


Work out the missing values:

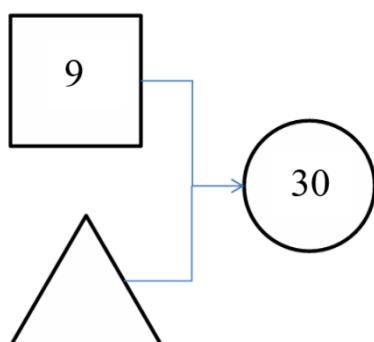
(a)



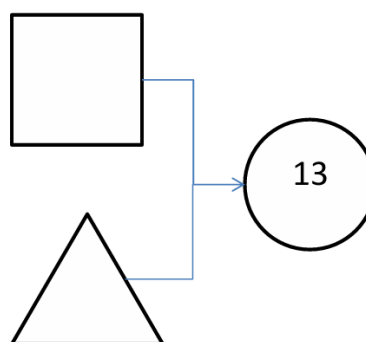
(b)



(c)



(d)



(5) Q30

(Total 5 marks)

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TOTAL: 100 MARKS

END