



Class  
Maths

Video Solutions



PRACTICE PAPER FOR

## AQA Paper 3H (June 2025)

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

Do not write  
outside the  
box

- 1 Tom uploads 30 videos to YouTube.  
YouTube demonetises 8 of the videos and the rest remain monetised.

1 (a) Write down the relative frequency of **demonetised** videos. [1 mark]

Answer \_\_\_\_\_

- 1 (b) Write the ratio  
monetised videos : demonetised videos

Give your answer in the form  $n : 1$  [1 mark]

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Answer \_\_\_\_\_ : 1

2 (a) Factorise fully  $6m^4 - 3m^8$  [2 marks]

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Answer \_\_\_\_\_

2 (b) Factorise  $x^2 + x - 42$  [2 marks]

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Answer \_\_\_\_\_





3 Work out the value of  $6.5^{999} \div 6.5^{996}$  [2 marks]

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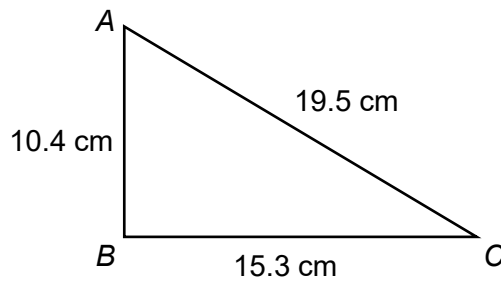
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Answer \_\_\_\_\_

4 Here is triangle  $ABC$ .



Not drawn  
accurately

Is angle  $ABC$  a right angle?  
Show working to support your answer.

[2 marks]

☐

Yes

☐

No

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**5 (a)** Sequence **A** is a linear sequence with

$$1^{\text{st}} \text{ term} = 6$$

$$5^{\text{th}} \text{ term} = 50$$

Work out an expression for the  $n$ th term of the sequence.

**[3 marks]**

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Answer \_\_\_\_\_

**5 (b)** Sequence **B** is a Fibonacci sequence with

$$1^{\text{st}} \text{ term} = 2.5$$

$$2^{\text{nd}} \text{ term} = 3.3$$

Work out the value of first term in the sequence that is an integer.

**[3 marks]**

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Answer \_\_\_\_\_

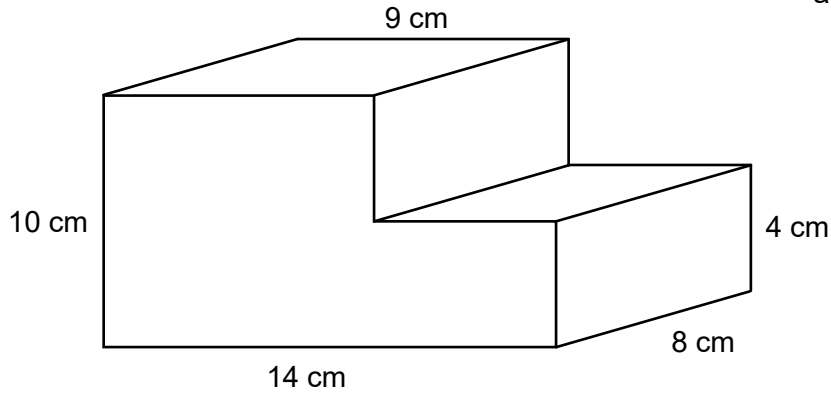




6

The cross section of a prism is made from two rectangles.

Not drawn  
accurately



Work out the volume of the prism.

[4 marks]

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Answer \_\_\_\_\_  $\text{cm}^3$





- 7 The table shows information about the screen time of 50 teenagers.

| Screen Time, $T$<br>(minutes) | Frequency |  |  |
|-------------------------------|-----------|--|--|
| $200 < T \leq 300$            | 6         |  |  |
| $300 < T \leq 400$            | 17        |  |  |
| $400 < T \leq 500$            | 14        |  |  |
| $500 < T \leq 600$            | 13        |  |  |

- 7 (a) Work out an estimate for the mean screen time of the 50 teenagers. [3 marks]

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Answer \_\_\_\_\_ minutes

- 7 (b) Which interval contains the median?  
You **must** show your working. [2 marks]

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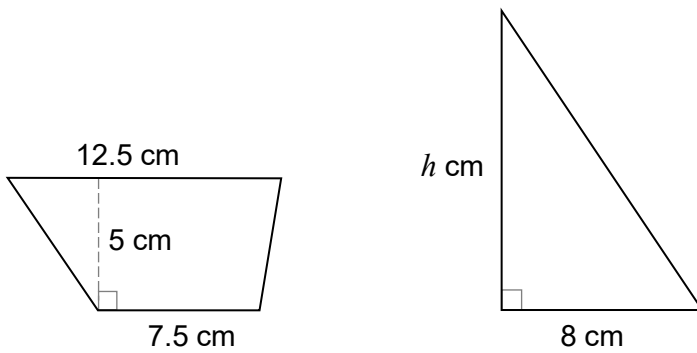
Answer \_\_\_\_\_  $< T \leq$  \_\_\_\_\_





8

Here is a trapezium and a triangle.



Not drawn  
accurately

The area of the triangle is 24% more than the area of the trapezium.

Work out the value of  $h$ , the perpendicular height of the triangle.

**[5 marks]**

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$h =$  \_\_\_\_\_





9 Here is some information about 72 counters in a box.

The counters are coloured either red or green and are either large or small.

number of red counters : number of green counters = 3 : 5

11 of the red counters are small.

8 of the green counters are large.

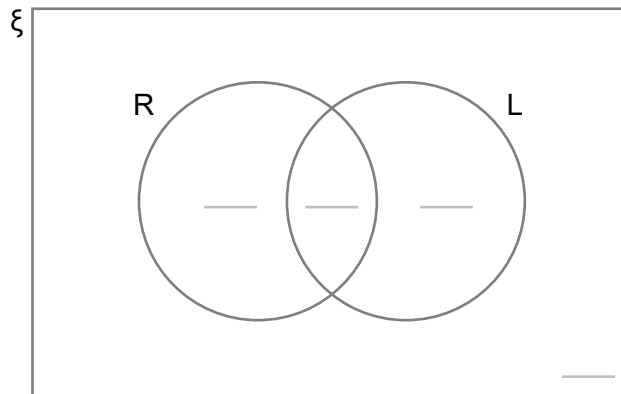
9 (a) Complete the Venn diagram to represent the information.

[4 marks]

$\xi$  = 72 counters in a box

R = red counters

L = large counters



9 (b) One of the counters is chosen at random.

Write down the probability that this counter is a large green counter.

[1 mark]

Answer \_\_\_\_\_

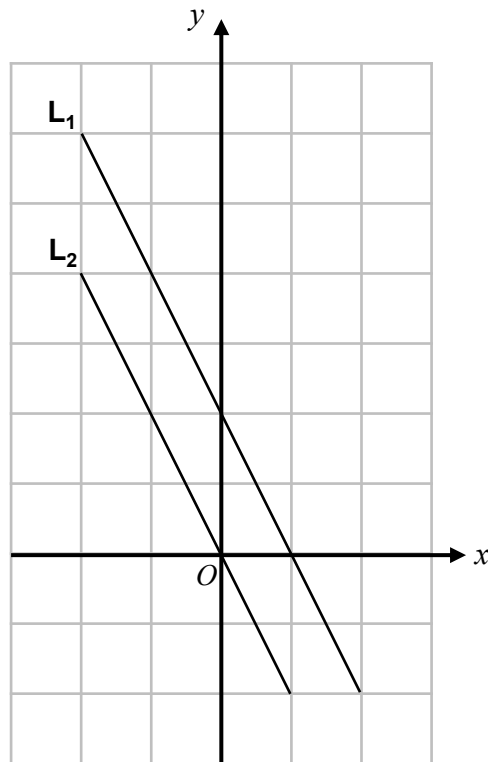




10

The lines  $L_1$  and  $L_2$  are shown on the grid.

Do not write  
outside the  
box



For each statement below, tick the correct box.

[3 marks]

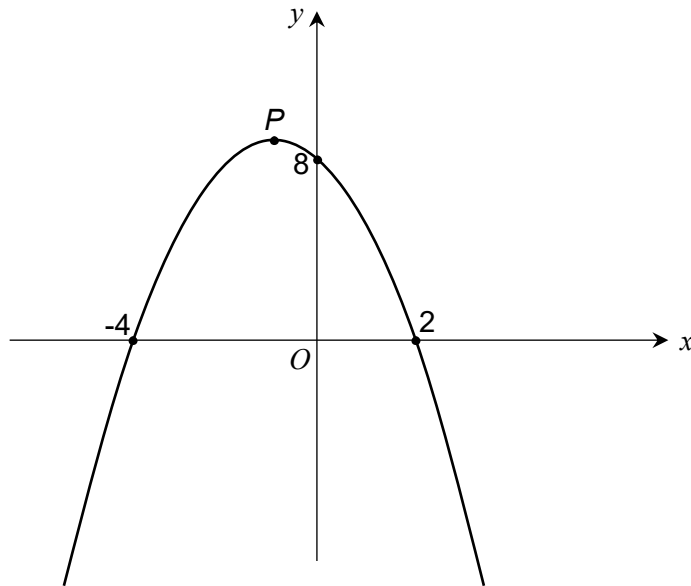
|                                                             | Must be true             | Could be true            | Cannot be true           |
|-------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| The gradient of $L_1$ is positive                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| The coordinates of the $y$ -intercept of $L_1$ are $(0, 2)$ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Lines $L_1$ and $L_2$ are parallel.                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Turn over ►





- 11 Here is a sketch of the curve  $y = -x^2 - 2x + 8$



- 11 (a) Write down the roots of  $-x^2 - 2x + 8 = 0$  [1 mark]

Answer \_\_\_\_\_ and \_\_\_\_\_

- 11 (b) Write down the coordinates of the  $y$ -intercept of the curve. [1 mark]

Answer ( \_\_\_\_\_ , \_\_\_\_\_ )

- 11 (c) Write down the  $x$ -coordinate of  $P$ , the turning point of the curve. [1 mark]

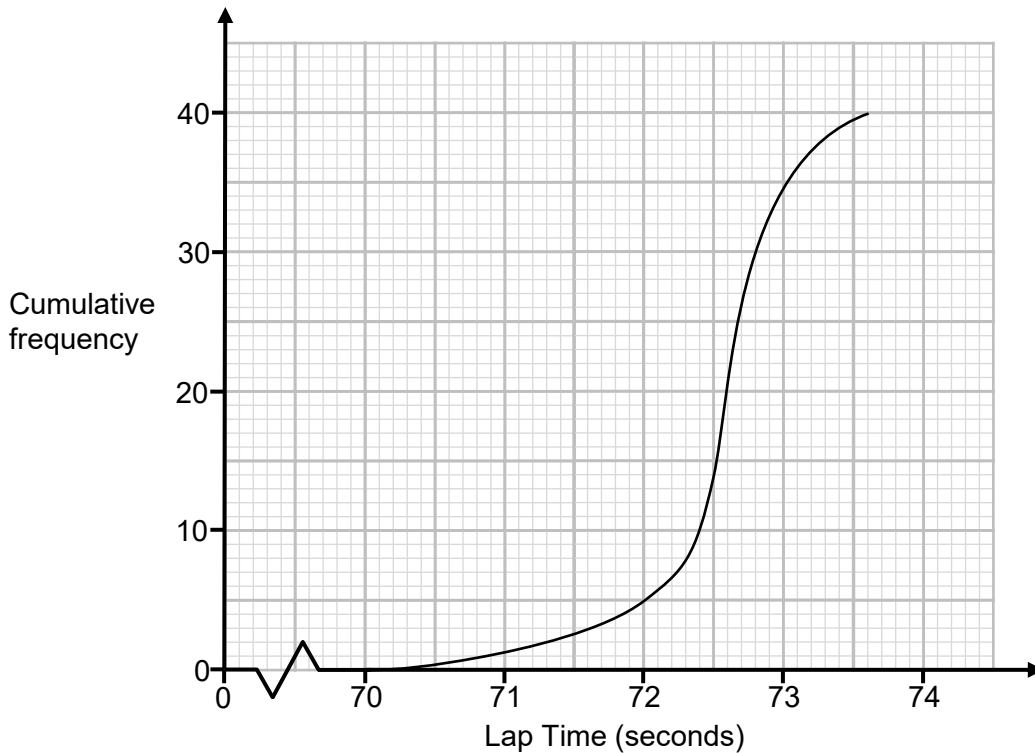
Answer \_\_\_\_\_





12

The cumulative frequency diagram shows information about the best lap time of 40 racing drivers.

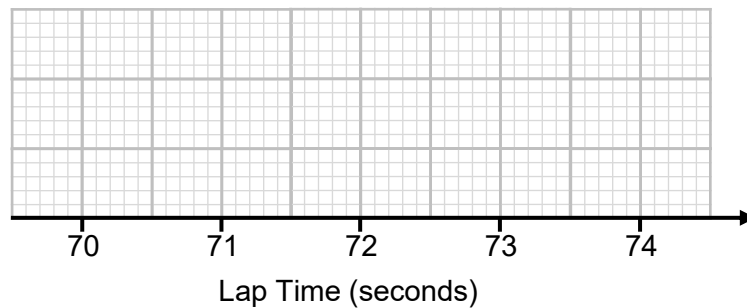


The fastest lap time was 70.9 seconds.

The slowest lap time was 73.6 seconds.

Draw a box plot on the grid below to show the lap times of the 40 racing drivers.

[3 marks]





- 13** There are 20 students in a tutor group.  
Each week the form tutor must select one student to be “student of the week”.  
The form tutor does not choose the same student more than once per month.

- 13 (a)** There are 4 school weeks in June.

Work out the number of different ways that the form tutor can select students to be “student of the week” during June. **[2 marks]**

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Answer \_\_\_\_\_

- 13 (b)** There are 3 school weeks in July.

During July, the form tutor is allowed to select the same student more than once.

Work out the number of different ways that the form tutor can select students to be “student of the week” during July **[2 marks]**

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Answer \_\_\_\_\_





- 14 Simplify fully  $\frac{7y-35}{y^2-25}$  [3 marks]

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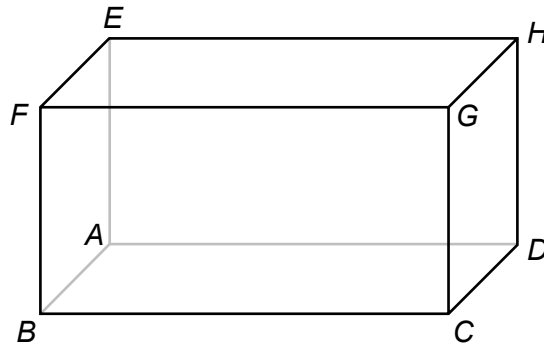
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Answer \_\_\_\_\_

- 15 Here is a cuboid.

$BH = 25.5 \text{ cm}$        $BD = 22.5 \text{ cm}$        $CD = 13.5 \text{ cm}$



- Work out the total length of all 12 edges of the cuboid. [4 marks]

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Answer \_\_\_\_\_ cm

Turn over ►





16

Prove algebraically that  $4.\dot{8}\dot{2} = \frac{217}{45}$

[3 marks]

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17

A sequence of numbers is formed by the iterative process

$$u_{n+1} = \sqrt{\frac{257-19u_n}{8}} \quad u_1 = 3$$

Work out the values of  $u_2$  and  $u_3$

[2 marks]

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$$u_2 = \underline{\hspace{10cm}}$$

$$u_3 = \underline{\hspace{10cm}}$$







19

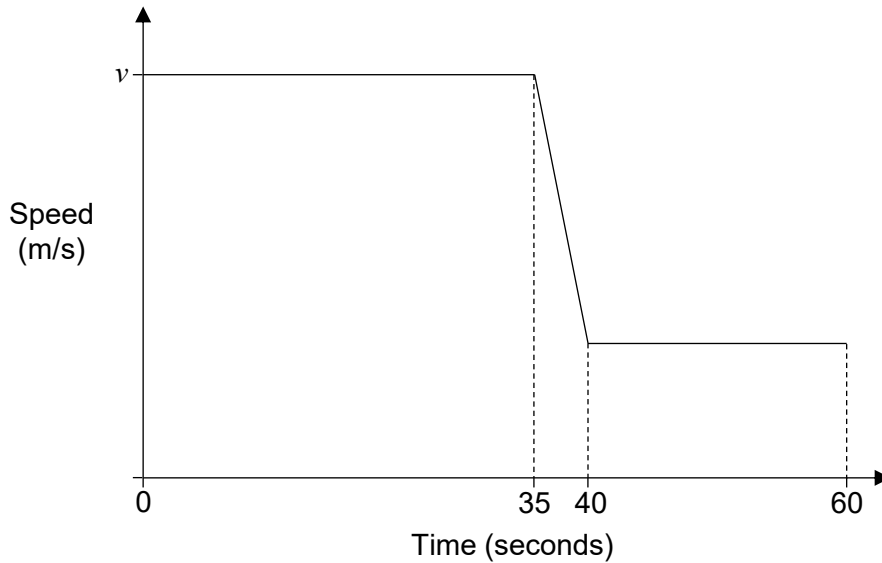
The graph shows the speed of a car for a 60 second journey.

The car starts at an initial speed of  $v$  m/s.

After 35 seconds the car decelerates for 5 seconds to a new speed.

The new speed is  $\frac{1}{3}$  of the initial speed.

The car maintains the new speed for the rest of the journey.



The car travels a total distance of 1215 metres.

Work out the value of  $v$ .

[5 marks]

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$v =$  \_\_\_\_\_ m/s





