

# AQA Mock Test Papers

## Paper1 - Test3

Please write clearly in block capitals.

Centre number

Candidate number

Surname \_\_\_\_\_

Forename(s) \_\_\_\_\_

Candidate signature \_\_\_\_\_

I declare this is my own work.

## GCSE Mathematics

### Higher tier - Paper 1 - Non-Calculator

# H

Time allowed: 1 hour 30  
minutes

#### Materials

For this paper you must have:

- mathematical instruments
- the Formulae Sheet (enclosed).

You must not use a calculator.



#### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- 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.
- 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.

For Examiner's 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	
<b>TOTAL</b>	

Answer all questions in the spaces provided.

1 Circle the value of  $(\sqrt{9})^4$ 

[1 mark]

36

81

27

108

2 Work out  $-3 \times -\frac{8}{9}$ 

Circle your answer.

[1 mark]

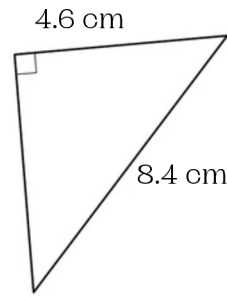
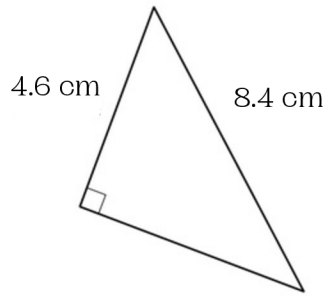
 $-\frac{8}{3}$  $-\frac{8}{9}$  $\frac{8}{3}$  $\frac{8}{9}$ 

3 Circle the calculation that increases 330 by 4.5%

[1 mark]

 $330 \times 1.045$  $344 \times 1.045$  $334 \times 1.045$  $303 \times 1.045$

4

Not  
drawn  
accurately

Circle the reason why the triangles are congruent.

[1 mark]

ASA

RHS

SAS

SSS

5

Work out  $50\,000\,000 \div 100$ 

Give your answer in standard form.

[2 marks]

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Answer \_\_\_\_\_

6 (a) Work out  $\frac{5^{12}}{5^8}$

Give your answer as a whole number.

[2 marks]

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Answer \_\_\_\_\_

6 (b) Simplify  $4 \times 16 \times 32$

Give your answer as a power of 2

[2 marks]

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Answer \_\_\_\_\_

7

In a group of 98 students

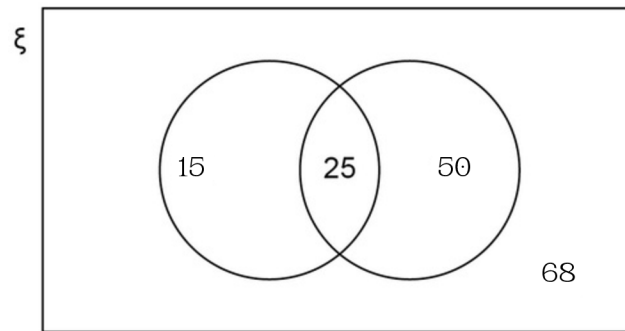
- 25 students study both Science and History.
- 15 students study Science but do not study History.
- 58 students study History.

Joel draws this Venn diagram to represent the information.

$\xi$  = the group of 98 students

A = the students who study Art

F = the students who study French



Make two criticisms of his diagram.

[2 marks]

Criticism 1 \_\_\_\_\_

\_\_\_\_\_

Criticism 2 \_\_\_\_\_

\_\_\_\_\_

Turn over for the next question

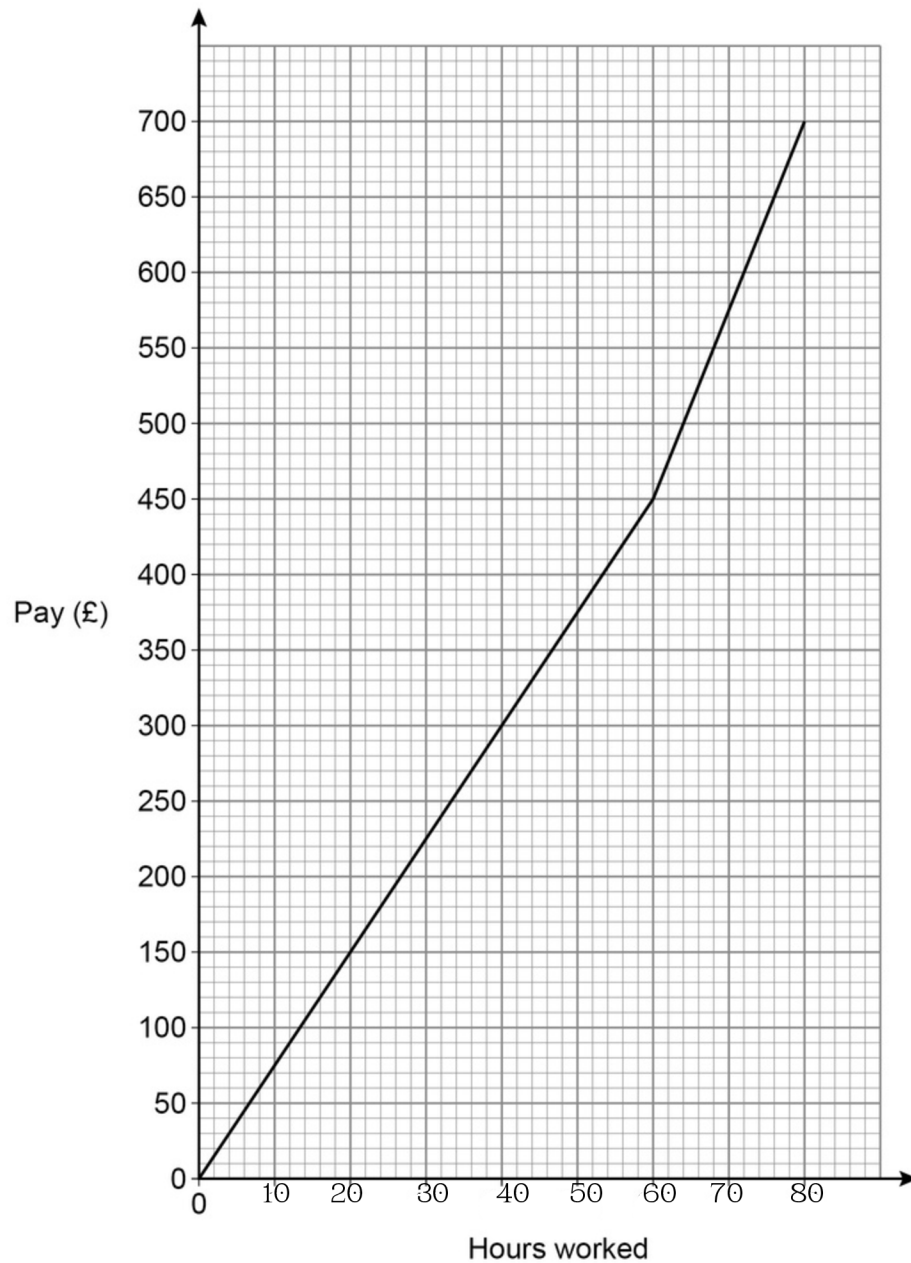
8

In a week, James is paid

a basic hourly rate for the first 60 hours worked

an overtime hourly rate for any extra hours worked.

The graph shows his pay for working up to 80 hours in a week.



Work out the ratio basic hourly rate : overtime hourly rate

Give your answer in its simplest form.

[3 marks]

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

9 (a) In each box, write a fraction less than 1 to make a correct calculation.

[1 mark]

$$\boxed{\frac{\quad}{\quad}} \times \boxed{\frac{\quad}{\quad}} = \frac{5}{12}$$

9 (b) In each box, write a decimal less than 1 to make a correct calculation.

[1 mark]

$$\boxed{\quad} \times \boxed{\quad} = 0.015$$

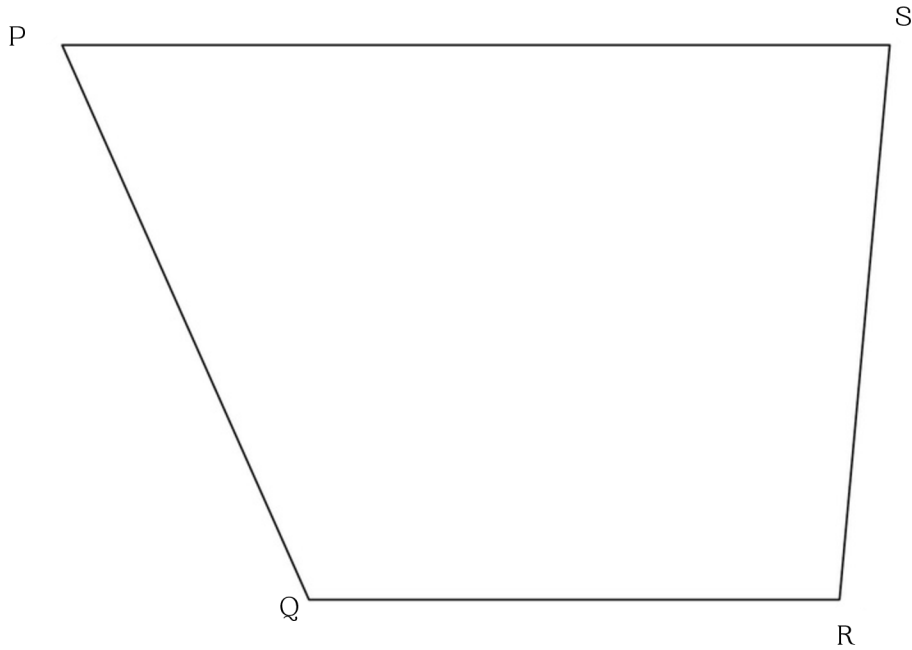
<hr style="width: 50%; margin: 0 auto;"/> 5
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Turn over ►

10

Use a ruler and compasses in this question.

PQRS represents a garden.



A tree is to be planted in the garden.

The tree will be in the region that is closer to PQ than to QR.

Label the region, X, where the tree could be planted.

Show all your construction lines.

[3 marks]



11

Workout  $\frac{\sqrt{72} - \sqrt{18}}{\sqrt{32}}$

Give your answer in the form  $\frac{\sqrt{a}}{b}$  a where a and b are integers.

[4 marks]

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Answer \_\_\_\_\_

$\frac{\quad}{7}$
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Turn over ►

12 Sophie wants to buy these tickets for a concert:

5 adult tickets at £18 each

3 child tickets at £12 each

A 12% booking fee is added to the ticket price.

A 2% surcharge is added for paying by credit card.

Work out the total charge for these tickets when paying by credit card.

[5 marks]

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Answer .....

13 Solve

$$\frac{4w}{25} = \frac{8}{5}$$

[2 marks]

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

$\frac{\quad}{7}$
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Turn over ►

- 14 A team of 12 painters can finish painting a building in 10 days.  
How many additional painters are required to complete the job in 7 days?  
Assume that all painters work at the same pace.

[3 marks]

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Answer \_\_\_\_\_

- 15 The cross-section of a pyramid has  $m$  sides.  
Circle the expression for the number of faces of the pyramid.

[1 mark]

$m + 1$

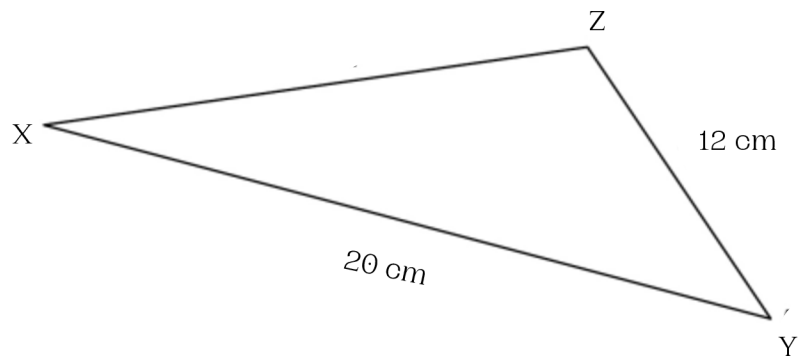
$m - 1$

$2m$

$2m + 1$

16 Here is a triangle.

[1 mark]



Give a reason why the length of side XZ cannot be 35 cm

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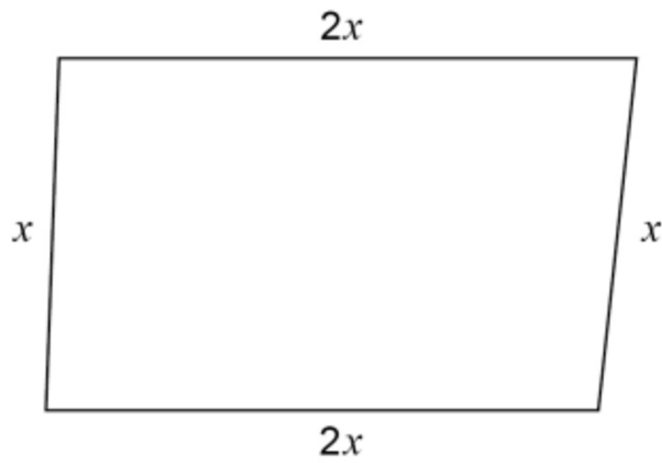
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Turn over for the next question

17 Here is a sketch of a quadrilateral. All lengths are in centimetres

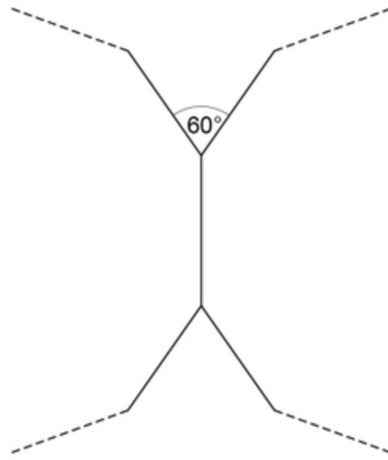


Tick one box for each statement.

[3 marks]

	True	May be true	Not true
The quadrilateral is a rectangle			
The quadrilateral is a parallelogram			
The quadrilateral is a rhombus			
The quadrilateral is a kite			

18 Two congruent regular polygons are joined together



[3 marks]

Work out the number of sides on each polygon

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Answer .....

Turn over for the next question





20 Rearrange  $y = \frac{7x+3}{x}$  to make  $x$  the subject.

[4 marks]

Answer .....

Turn over for the next question

7
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Turn over ►

21 A, B, C and D are junctions on a motorway.



Not drawn  
accurately

$$\text{distance CD} = 2 \times \text{distance AB}$$

$$\text{distance BC} = 20 \text{ miles}$$

Salma drives from A to C.

She drives for 30 minutes at an average speed of 60 miles per hour.

Work out the distance AD.

[4 marks]

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Answer \_\_\_\_\_



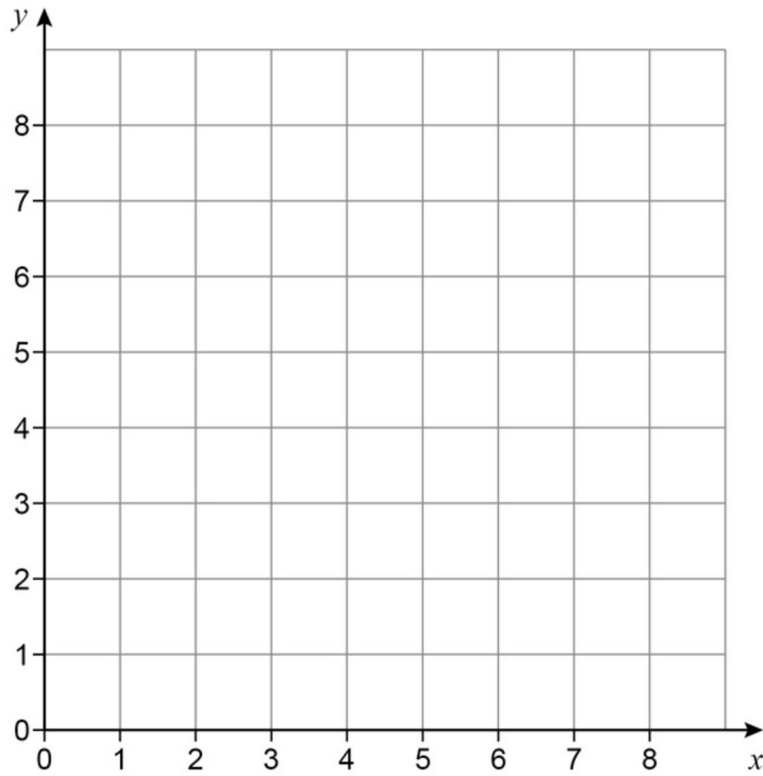
23

On the grid, identify the region represented by

$$x \geq 2, y < 4 \text{ and } x+y \leq 8$$

Label the region R.

[3 marks]

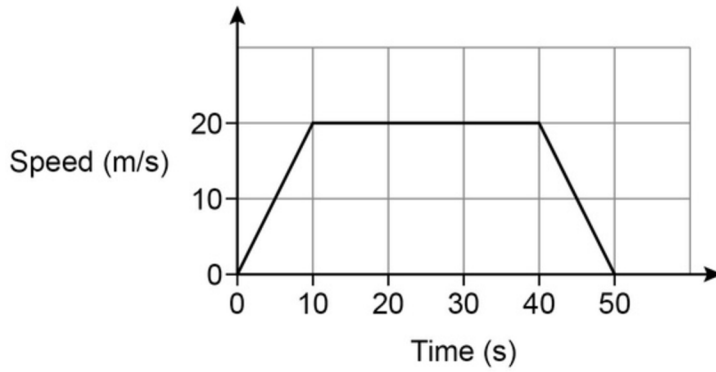


Turn over for the next question

Turn over ►



25 Here is the speed-time graph for a 50-second journey.



25 (a) Circle the acceleration, in  $\text{m/s}^2$ , halfway through the journey.

[1 mark]

0

2

20

25

25 (b) Work out the total distance travelled.

[2 marks]

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Answer \_\_\_\_\_ m

26 A linear sequence starts

$$a + 3b \quad a + 9b \quad a + 15b \quad \dots\dots \quad \dots\dots$$

The 2nd term has value 12

The 5th term has value 30

Work out the values of a and b.

[4 marks]

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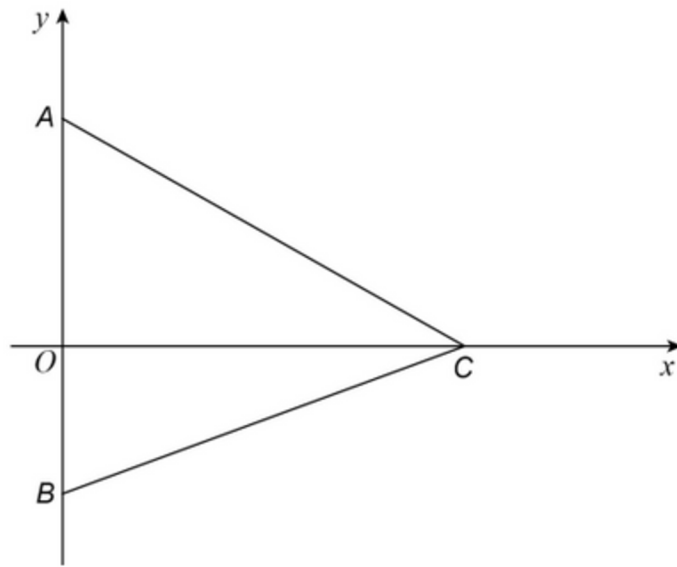
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$$a = \underline{\hspace{2cm}} \quad b = \underline{\hspace{2cm}}$$

27 A, B and C are points on the axes as shown



Not drawn  
accurately

The area of triangle ABC is 24 square units.  
Work out possible coordinates for A, B and C.

[2 marks]

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A (..... , ..... ) B (..... , ..... ) C ( ..... , ..... )

Turn over for the next question



