



THIRD SPACE
LEARNING

Mathematics

Paper 2

(Calculator)

Higher Tier

AQA GCSE

SET 5

Mathematics Paper 2 (Non-Calculator) Higher Tier AQA

GCSE SET 5

Name

Total marks

Paper length: 1hr 30mins



Instructions

- Use black ink or ball-point pen.
- Fill in the boxes at the top of this page with your name, centre number and candidate number.
- Answer all questions.
- Answer the questions in the spaces provided – there may be more space than you need.
- You must show all your working.
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- Calculators may be used.

Information

- The total mark for this paper is 80
- The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

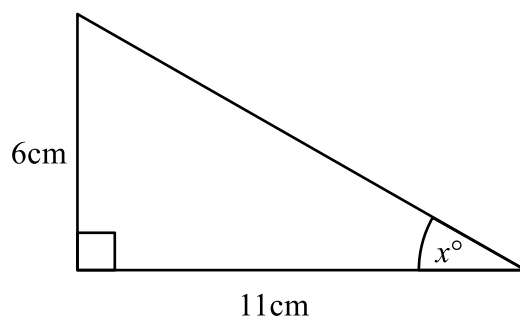
Question	Mark
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You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

This practice paper is based on the topics from the **advanced information for the November 2026 exam series**.

Please note, this practice paper is an example to help revision, these topics can be tested in other ways and other topics may be included in the actual papers

1



Work out the value of x

Give your answer correct to 3 significant figures.

[2 marks]

Answer _____^o

2 (a) Circle the reciprocal of 0.4

[1 mark]

4 $\frac{1}{4}$ 2 2.5

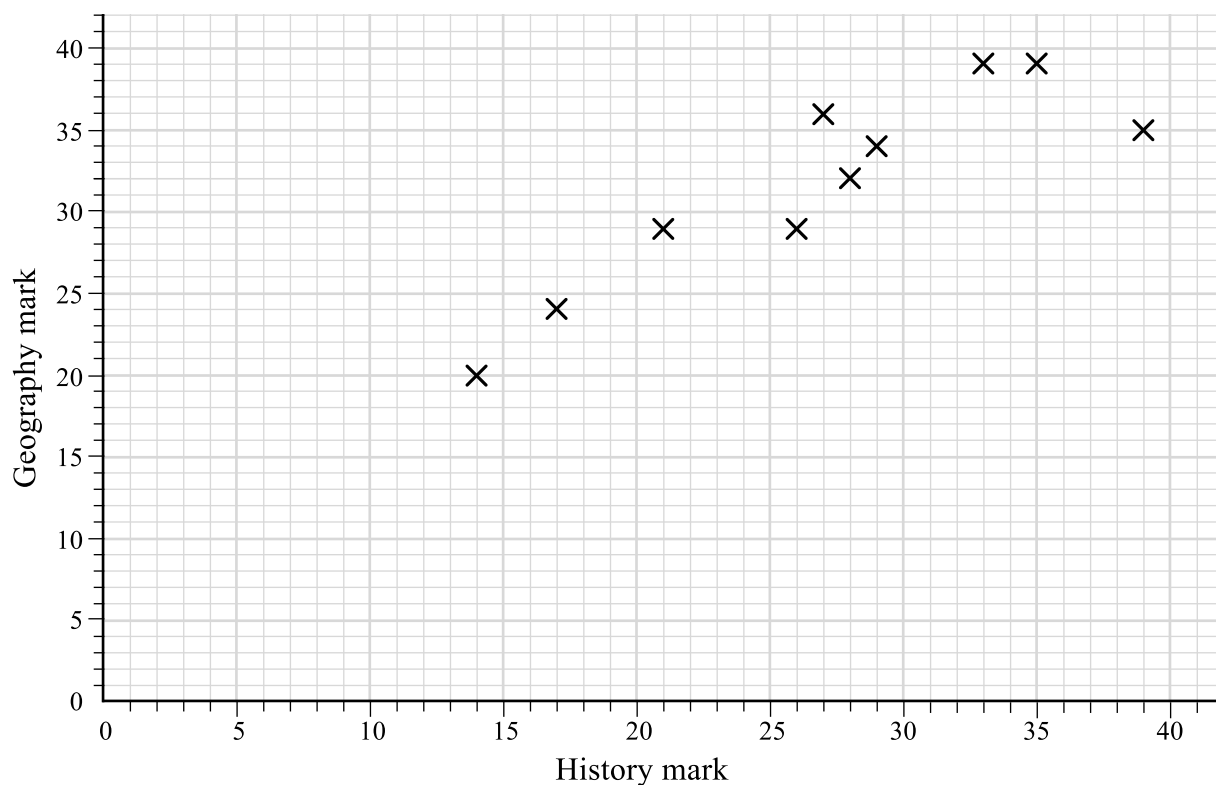
(b) $x = 5.3$ to 2 significant figures.

Complete the error interval for x

[2 marks]

Answer _____ $\leq x <$ _____

- 3 The scatter diagram shows the history and geography marks of 10 students in their recent tests.



- (a) Describe the correlation shown in the graph.

[1 mark]

Another student scored 25 in the history test.

- (b) Use the graph to estimate this student's score in the geography test.

[2 marks]

- (c) Both tests were out of 40. Which test do you think was easier? Explain why.

[2 marks]

- 4 The bearing of A from B is 121° .
What is the bearing of B from A ?

[2 marks]

Answer _____^o

- 5 Frankie invests £7000 in a bank account.
Frankie gets 6% per annum compound interest.
After n years, Frankie has £9367.58
Work out the value of n .

[2 marks]

Answer _____

- 6 The points A , B and C form a straight line ABC .

The coordinates of A are $(2, 3)$.

The coordinates of B are $(6, 9)$.

Given that $AB:BC = 2:5$, find the coordinates of C .

[4 marks]

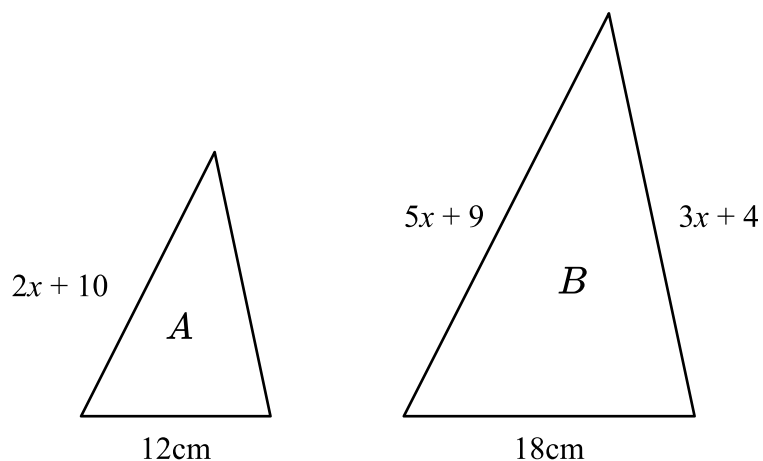
Answer _____ °

- 7 k is a whole number such that $\sqrt{k} = 13.7$ to 1 decimal place. What is the largest possible value of k ?

[2 marks]

Answer _____

8 Triangles A and B are similar triangles.



Work out the perimeter of triangle B .

[5 marks]

Answer _____ cm

- 9 The grouped frequency table gives information about the time taken for 80 swimmers to swim 100 metres.

Time, t seconds	Frequency
$60 \leq t < 90$	7
$80 \leq t < 120$	14
$110 \leq t < 150$	23
$140 \leq t < 180$	27
$170 \leq t < 210$	9

- (a) Complete the cumulative frequency table.

[1 mark]

Time, t seconds	Cumulative frequency
$60 \leq t < 90$	
$60 \leq t < 120$	
$60 \leq t < 150$	
$60 \leq t < 180$	
$60 \leq t < 210$	

- (b) On the grid opposite, draw a cumulative frequency graph for this information.

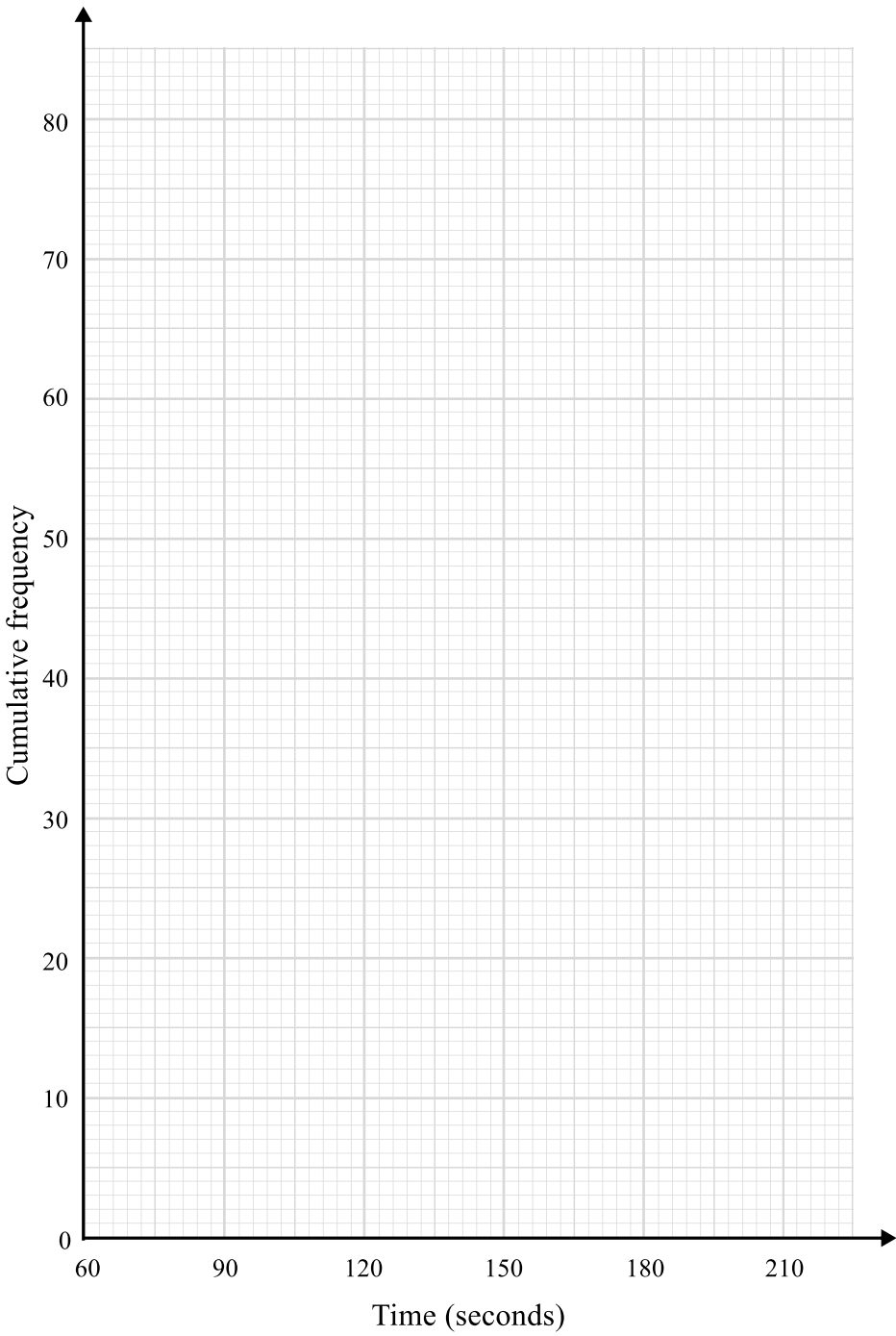
[2 marks]

Question continued on the next page

(c) Use your graph to find an estimate for the interquartile range.

[2 marks]

Answer _____



10 Amina has a pack of playing cards. However, some of the cards are missing.
Amina is going to pick a card at random.
The probability that she picks a card from each suit is shown in the table.

Suit	Heart	Club	Diamond	Spade
Probability	0.25	0.275		

(a) Describe the correlation shown in the graph. **[2 marks]**

Answer _____

(b) Amina has all 13 diamond cards.
Complete the table. **[2 marks]**

(c) Amina designs a game. To win the game, the player must draw a club.
A full pack of cards contains 52 cards, 13 of each suit.
Amina says that it is more likely that a player will win if they use her pack of cards than if they use a full pack of cards. Is Amina correct? Explain your answer. **[2 marks]**

11 The equation of line L_1 is $y = 3x - 7$

The equation of line L_2 is $3y + x = 1$

Show that lines L_1 and L_2 are perpendicular.

[2 marks]

12 The price of a piece of furniture in London is £345

The price of the furniture in Venice is €360

The price of the furniture in New York is \$385

The exchange rates are:

$$£1 = €1.16$$

$$£1 = \$1.37$$

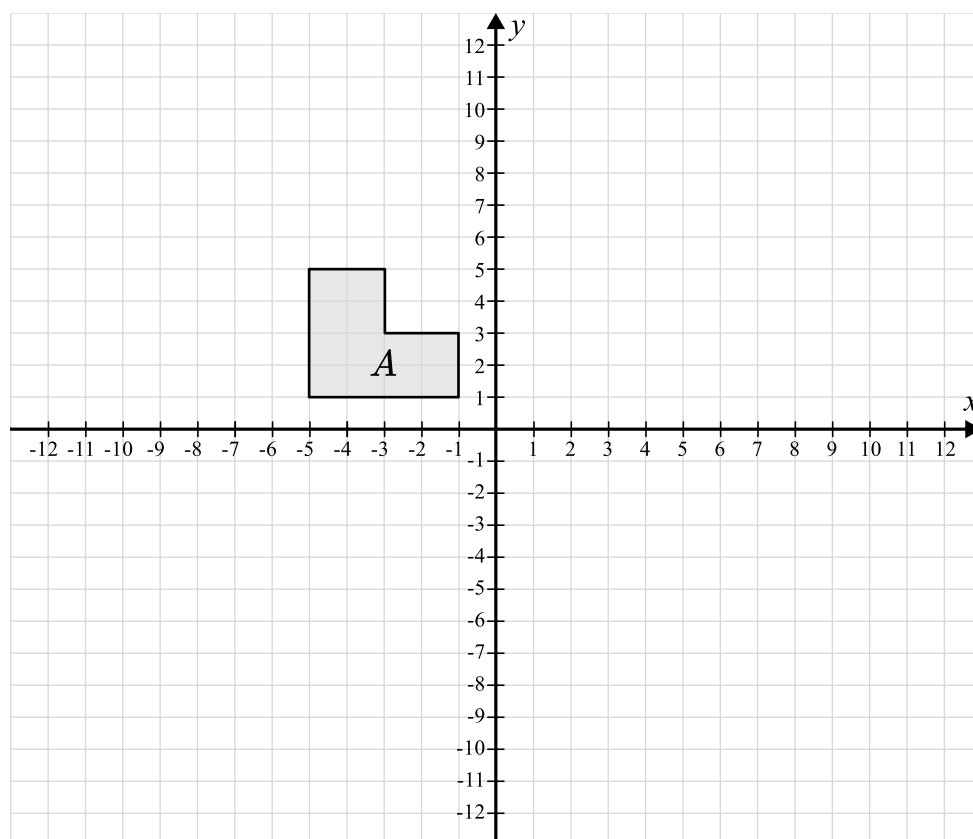
In which city is the furniture the most expensive?

Show how you decide.

[2 marks]

Answer _____

13



Enlarge shape A by scale factor -2 from the centre $(0, 0)$.

[2 marks]

14 (a) Write $3\{2x + 5[4x - 7(x - 2)] - 6\}$ in the form $ax + b$

[2 marks]

Answer _____

(b) Factorise $5x^2 + 2x - 3$

[2 marks]

Answer _____

15 A circle's radius is increased by 12%.

Find the % increase in the circle's area.

[3 marks]

Answer _____ %

16 (a) Show that the equation $x^3 - 2x^2 - 1 = 0$ has a solution between $x = 2$ and $x = 3$

[2 marks]

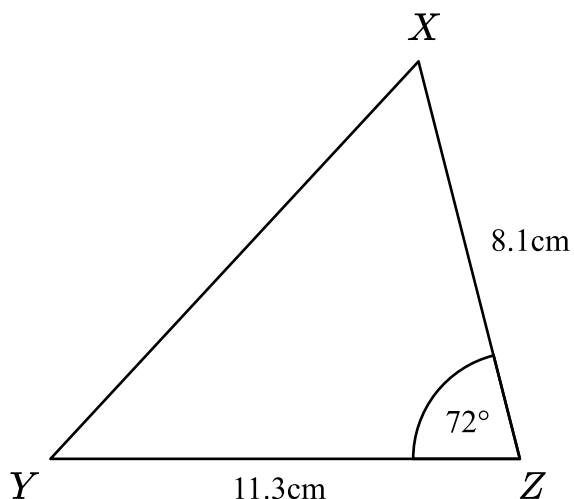
(b) Show that the equation $x^3 - 2x^2 - 1 = 0$ can be written in the form $x = \sqrt[3]{2x^2 + 1}$

[1 mark]

(c) Starting with $x_0 = 2.5$, use the iterative formula $x_{n+1} = \sqrt[3]{2x_n^2 + 1}$ four times to find an estimate for the solution of $x^3 - 2x^2 - 1 = 0$
Give each value to 4 decimal places.

[3 marks]

17 Here is a triangle.



(a) Work out the length XY .

Give your answer to 3 significant figures.

[3 marks]

Answer _____ cm

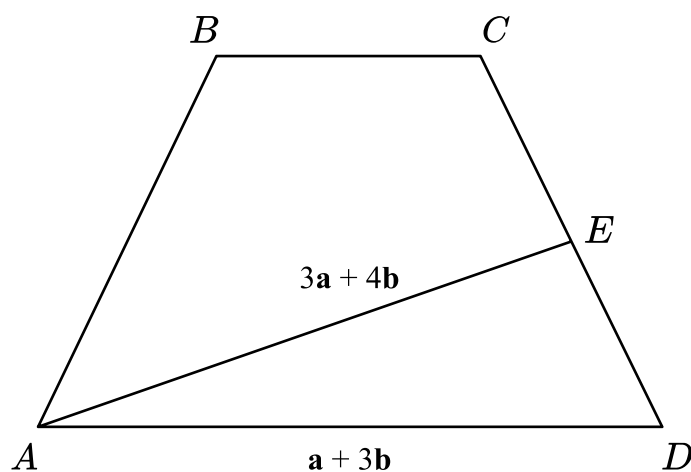
(b) Work out the area of triangle XYZ .

Give your answer to 3 significant figures.

[3 marks]

Answer _____ cm³

18



$$\overrightarrow{AD} = \mathbf{a} + 3\mathbf{b}$$

$$\overrightarrow{AE} = 3\mathbf{a} + 4\mathbf{b}$$

$$CE : ED = 5 : 4$$

Express \overrightarrow{AC} in terms of \mathbf{a} and \mathbf{b} .

Give your answer in its simplest form.

[4 marks]

Answer _____

19 (a) Write $11 + 12x - 2x^2$ in the form $a - b(x - c)^2$ where a , b and c are integers.

[3 marks]

Answer _____

(b) C is the curve with equation $y = 11 + 12x - 2x^2$

A is the maximum point of C .

Use your answer to a to write down the coordinates of point A .

[1 mark]

Answer _____

20 Show that $\frac{1 + \sqrt{9a}}{b - \sqrt{4a}}$ can be written in the form $\frac{m + n\sqrt{a}}{p}$,

where n , m and p are expressions in terms of a and b , and state n , m and p .

[5 marks]

Answer $m =$ _____

Answer $n =$ _____

Answer $p =$ _____

- [6 marks]**

[illegible]

Answer _____


End of Questions

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