

Please check the examination details below before entering your candidate information

Candidate surname		Other names	
Centre Number		Candidate Number	
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Pearson Edexcel International GCSE

Wednesday 3 June 2026

Morning (Time: 2 hours)

Paper reference **4MA1/2HR**

Mathematics A

PAPER 2HR

Higher Tier



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

Total Marks

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.
- Without sufficient working, correct answers may be awarded no marks.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
- Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this paper is 100.
- 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.
- Check your answers if you have time at the end.

Turn over ►

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International GCSE Mathematics

Formulae sheet – Higher Tier

Arithmetic series

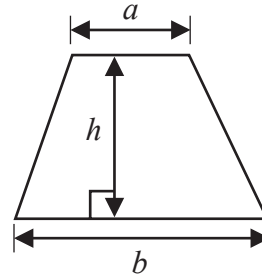
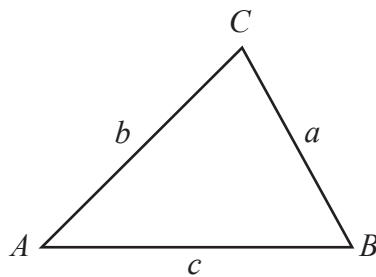
Sum to n terms, $S_n = \frac{n}{2} [2a + (n-1)d]$

The quadratic equation

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\text{Area of trapezium} = \frac{1}{2}(a+b)h$$

**Trigonometry****In any triangle ABC**

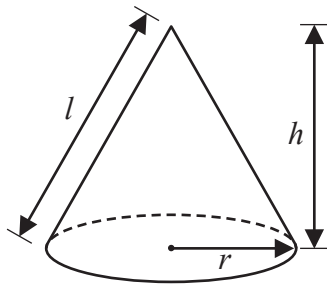
$$\text{Sine Rule} \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{Cosine Rule} \quad a^2 = b^2 + c^2 - 2bc \cos A$$

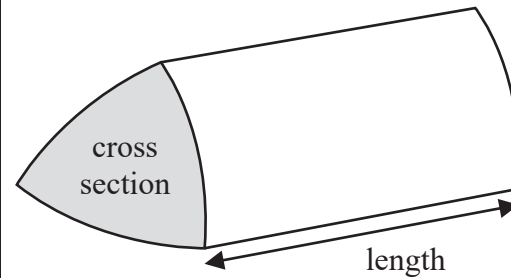
$$\text{Area of triangle} = \frac{1}{2}ab \sin C$$

$$\text{Volume of cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Curved surface area of cone} = \pi r l$$

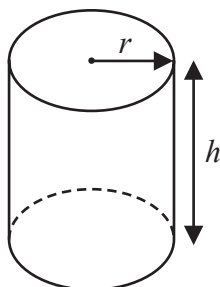
**Volume of prism**

= area of cross section $\times$ length



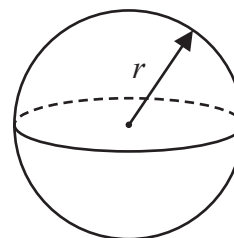
$$\text{Volume of cylinder} = \pi r^2 h$$

$$\text{Curved surface area of cylinder} = 2\pi r h$$



$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$\text{Surface area of sphere} = 4\pi r^2$$



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Answer ALL TWENTY SEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 The diagram shows a right-angled triangle.

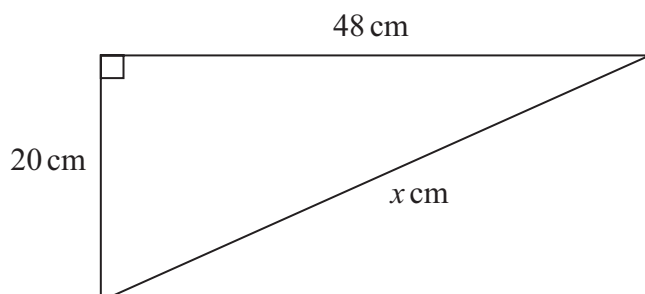


Diagram **NOT**
accurately drawn

Work out the value of x

$x =$

(Total for Question 1 is 3 marks)



P 7 9 7 9 0 A 0 3 2 8

- 2 Here are the first five terms of an arithmetic sequence.

14 8 2 -4 -10

Find an expression, in terms of n , for the n th term of this sequence.

(Total for Question 2 is 2 marks)

- 3 $\mathcal{E} = \{\text{integers from 1 to 12}\}$
 $A = \{\text{factors of 12}\}$

List the members of the set A'

(Total for Question 3 is 1 mark)



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- 4 (a) Solve $3(x + 2) = 1 - 5x$
Show clear algebraic working.

$$x = \dots\dots\dots (3)$$

$$P = c^2 - 5d$$

- (b) Work out the value of P when $c = -7$ and $d = 3$

$$P = \dots\dots\dots (2)$$

- (c) Simplify m^0

$$\dots\dots\dots (1)$$

- (d) Simplify $(4r^2t)^3$

$$\dots\dots\dots (2)$$

(Total for Question 4 is 8 marks)



5 Sarah and Dej each give some money to charity **A** and to charity **B**

Sarah shares \$400 between charity **A** and charity **B** in the ratio 2 : 3

Dej shares \$375 between the two charities.

He gives twice as much money to charity **B** as he gives to charity **A**

Dej gives more money to charity **B** than Sarah gives to charity **B**

How much more?

\$.....

(Total for Question 5 is 5 marks)



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6 Mika has six cards.
There is a number on each card.
The cards are arranged with the numbers in order of size.
Three of the numbers are hidden.

3

7

8

The mode of the six numbers is 8
The range of the six numbers is 7
The sum of the six numbers is 31

Work out the median of the six numbers.

(Total for Question 6 is 4 marks)

7 (a) Write 4×10^{-5} as an ordinary number.

.....
(1)

(b) Work out $(6 \times 10^{158}) \times (2 \times 10^{72})$
Give your answer in standard form.

.....
(2)

(Total for Question 7 is 3 marks)

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- 8 Lauren's salary increased by 4%
After the increase, her salary was 36 400 euros.
Work out Lauren's salary before the increase.

..... euros

(Total for Question 8 is 3 marks)

- 9 Change a speed of 198 kilometres per hour to a speed in metres per second.
Show your working clearly.

..... m/s

(Total for Question 9 is 3 marks)



10 The diagram shows a solid cylinder.

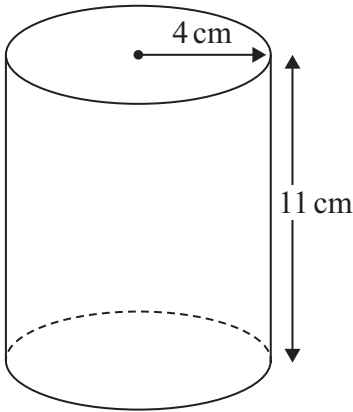


Diagram **NOT** accurately drawn

The cylinder has radius 4 cm and height 11 cm
The cylinder is made from wood with a density of 0.6 g/cm^3
Work out the mass of the cylinder.
Give your answer correct to 3 significant figures.

..... g

(Total for Question 10 is 3 marks)

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- 11 The diagram shows a square $ABCD$ and a right-angled triangle EFG

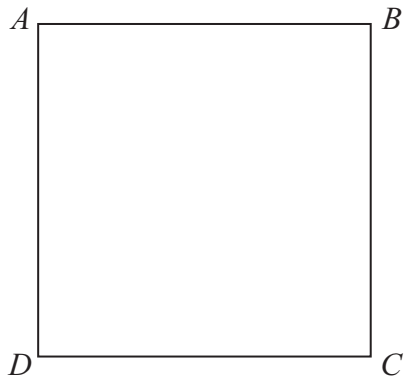
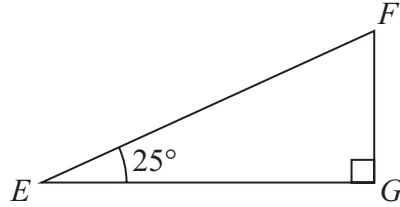


Diagram **NOT**
accurately drawn



The area of square $ABCD$ is 36 cm^2
 $DC = EG$

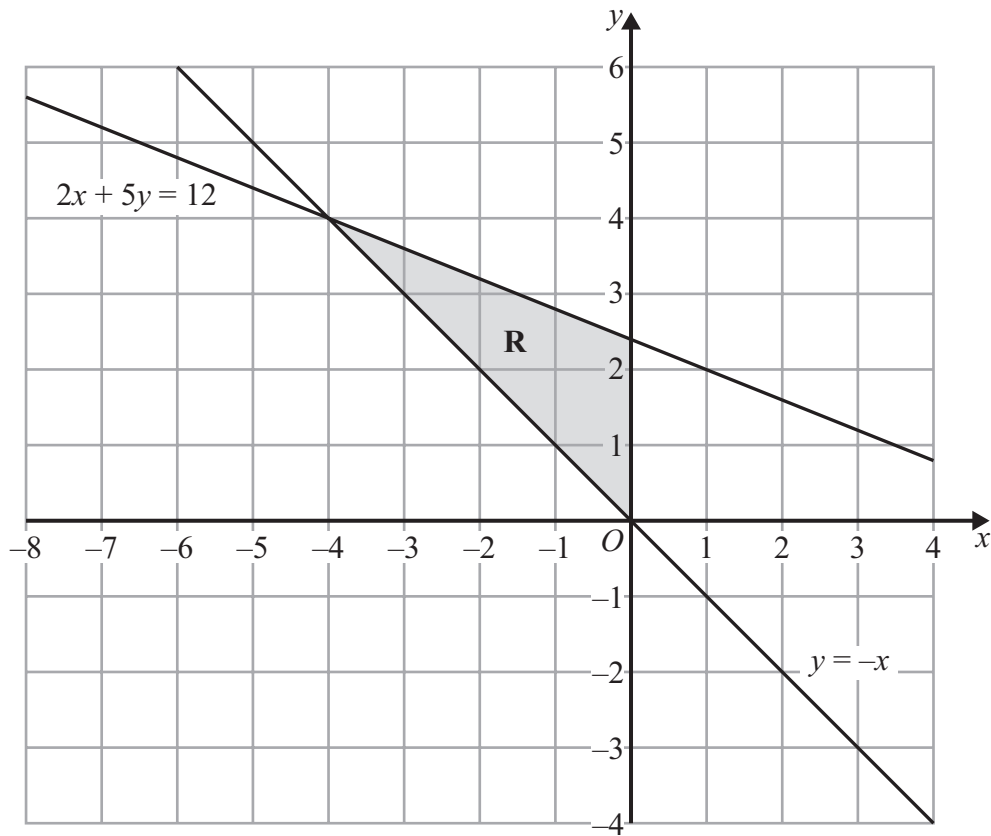
Work out the area of triangle EFG
 Give your answer correct to one decimal place.
 Show your working clearly.

..... cm^2

(Total for Question 11 is 5 marks)



12



The region **R**, shown shaded in the diagram, is bounded by the y -axis and the straight lines with equations

$$y = -x$$

$$2x + 5y = 12$$

Write down the three inequalities that define **R**

.....

.....

.....

(Total for Question 12 is 3 marks)



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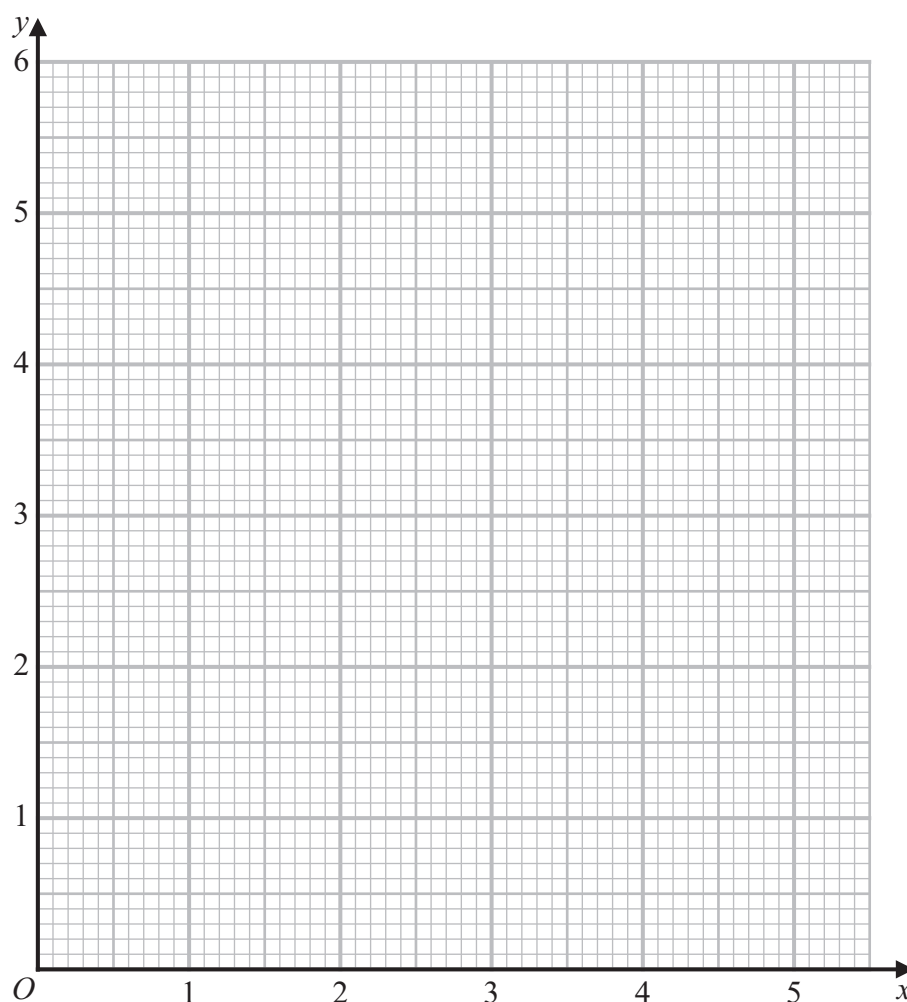
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13 (a) Complete the table of values for $y = x + \frac{1}{x}$

x	0.25	0.5	1	2	3	4	5
y	4.25			2.5	3.33		

(2)

(b) On the grid, draw the graph of $y = x + \frac{1}{x}$ for $0.25 \leq x \leq 5$



(2)

(Total for Question 13 is 4 marks)



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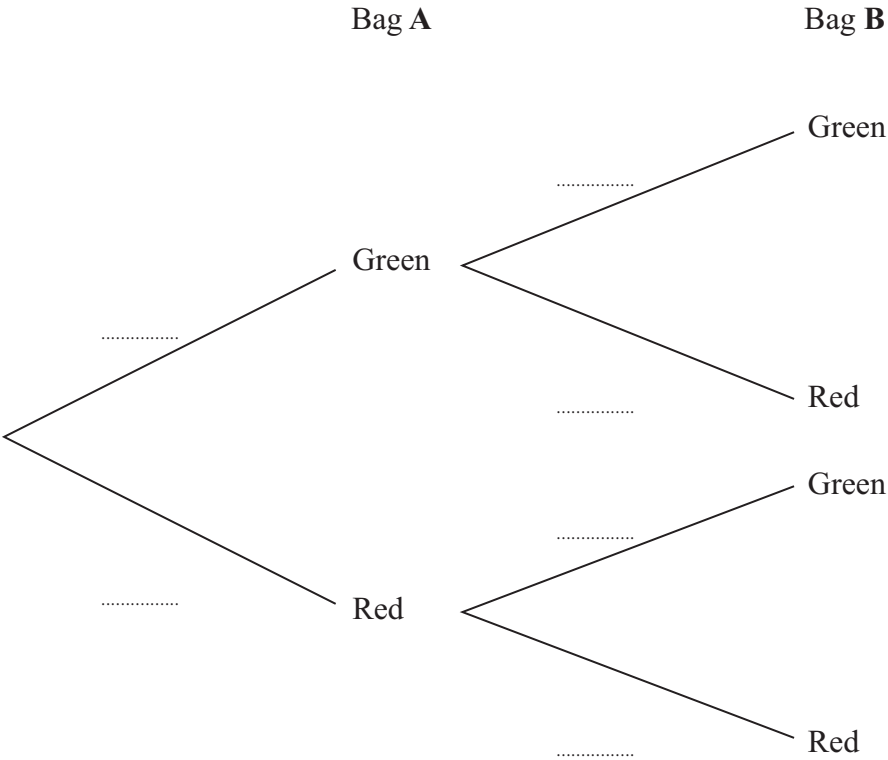
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14 Pras has 2 bags of counters, bag A and bag B

In bag A, there are 4 green counters and 3 red counters.
In bag B, there are 5 green counters and 1 red counter.

Pras is going to take at random a counter from bag A and a counter from bag B

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Pras will take two green counters.

(2)



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Pras also has a third bag of counters, bag **C**

In bag **C**, there are only green counters and red counters.

All the original counters are back in bag **A** and bag **B**

Pras is going to take at random a counter from bag **A**, a counter from bag **B** and a counter from bag **C**

The probability that Pras will take three red counters is $\frac{3}{70}$

(c) Work out the probability that Pras will take 1 green counter and 2 red counters.

.....
(4)

(Total for Question 14 is 8 marks)



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15 Mina recorded the times taken, in minutes, by 11 people to complete a puzzle.
Here are her results.

2 2 3 6 7 9 9 12 13 17 20

Find the interquartile range of these times.

..... minutes

(Total for Question 15 is 2 marks)

16 $\left(\frac{1}{\sqrt{a}}\right)^6 = a^n$

Work out the value of n

$n =$

(Total for Question 16 is 2 marks)



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17 Use algebra to show that $0.\dot{8}1\dot{4} = \frac{22}{27}$

(Total for Question 17 is 2 marks)

18 Here are two vectors.

$$\overrightarrow{AB} = \begin{pmatrix} 4 \\ 5 \end{pmatrix} \quad \overrightarrow{CB} = \begin{pmatrix} -2 \\ 8 \end{pmatrix}$$

Find $\overrightarrow{AC}$ as a column vector.

$$\overrightarrow{AC} = \begin{pmatrix} \dots\dots\dots \\ \dots\dots\dots \end{pmatrix}$$

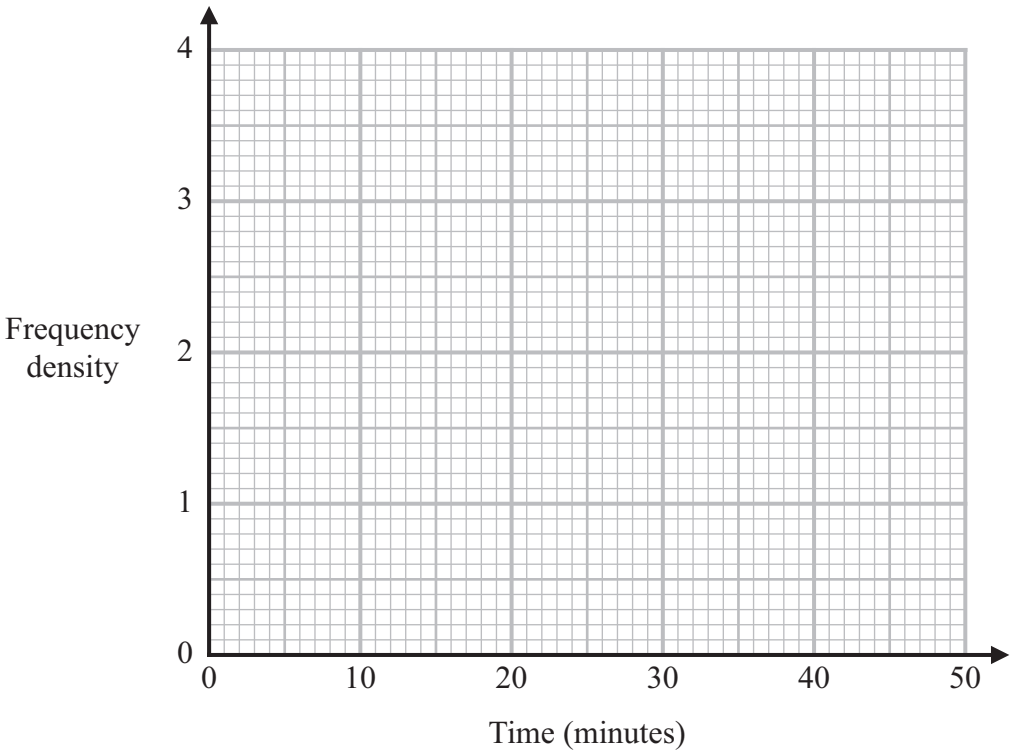
(Total for Question 18 is 2 marks)



19 The table gives information about the times, in minutes, some people spent waiting to go on a rollercoaster.

Time (t minutes)	Frequency
$0 < t \leq 20$	14
$20 < t \leq 25$	12
$25 < t \leq 35$	32
$35 < t \leq 50$	30

On the grid, draw a histogram for this information.



(Total for Question 19 is 3 marks)



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20 Make x the subject of $y = \frac{3x+5}{4-2x}$

(Total for Question 20 is 3 marks)

21 $p = \frac{d-e}{f}$

$d = 6.6$ correct to 1 decimal place

$e = 2.8$ correct to 1 decimal place

$f = 0.47$ correct to 2 decimal places

Calculate the lower bound for the value of p

Give your answer correct to 3 significant figures.

Show your working clearly.

(Total for Question 21 is 3 marks)



22 Solve the simultaneous equations

$$\begin{aligned}y^2 &= x^2 + 7 \\ y &= 3x - 5\end{aligned}$$

Show clear algebraic working.

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(Total for Question 22 is 5 marks)



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23 **K**, **L** and **M** are three similar solids.

volume of **K**: volume of **L** = 125:216

surface area of **K**: surface area of **M** = 4:9

The height of **M** is $y\%$ greater than the height of **L**

Work out the value of y

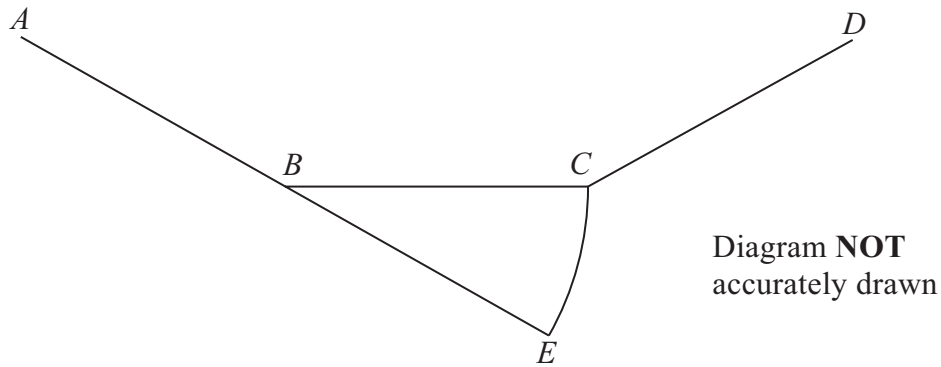
Show your working clearly.

$y = \dots\dots\dots$

(Total for Question 23 is 5 marks)



24



AB , BC and CD are three sides of a regular polygon.
 ABE is a straight line.

BCE is a sector of a circle with centre B and radius 4.5 cm

The length of arc CE is $\frac{3}{10}\pi$ cm

Work out the sum of the interior angles of the regular polygon.

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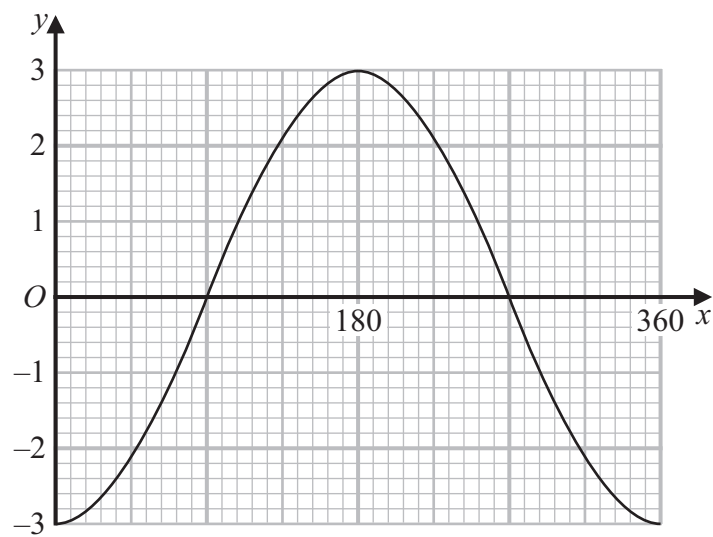
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(Total for Question 24 is 4 marks)



25 The graph of $y = a \sin(x + b)^\circ$ for $0 \leq x \leq 360$ is drawn on the grid below.



Given that $a < 0$ and that $0 < b < 360$

(a) find the value of a and the value of b

$a = \dots\dots\dots$

$b = \dots\dots\dots$

(2)

A curve has equation $y = f(x)$

The point T with coordinates (p, q) lies on the curve.

(b) Find the coordinates of the image of T on the curve with equation

$$y = f(2x) + 5$$

Give your coordinates in terms of p and q

(.....,)

(2)

(Total for Question 25 is 4 marks)



26 Here are the first four terms of an arithmetic series.

$(k + 2)$ $(k + 5)$ $(k + 8)$ $(k + 11)$

The sum of the first $2n$ terms of the series is 4 times the sum of the first n terms of the series.

Work out the numerical value of the 100th term of the series.
Show your working clearly.

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(Total for Question 26 is 6 marks)



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27 Bryan owns a house.

During 2024, the value of Bryan’s house increased by $x\%$
During 2025, the value of Bryan’s house increased by $2x\%$

Overall, during 2024 and 2025, the value of Bryan’s house increased by 38.88%

Work out the value of x
Show clear algebraic working.

$x = \dots\dots\dots$

(Total for Question 27 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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