

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 **4MA1/2H**

Mathematics A

PAPER 2H

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.

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International GCSE Mathematics
Formulae sheet – Higher Tier

Arithmetic series

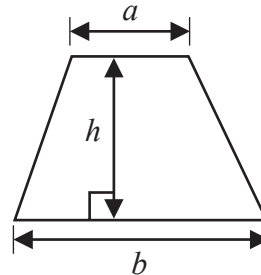
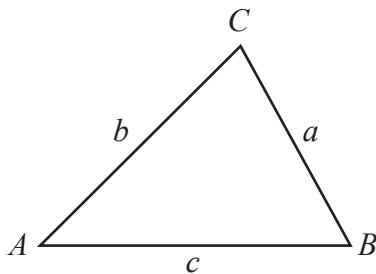
Sum to n terms, $S_n = \frac{n}{2} [2a + (n-1)d]$

The quadratic equation

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

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

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

**Trigonometry**

In any triangle ABC

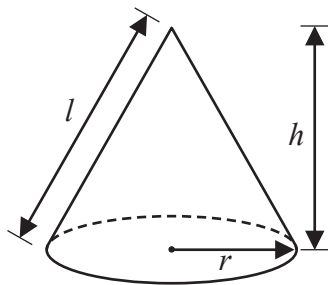
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

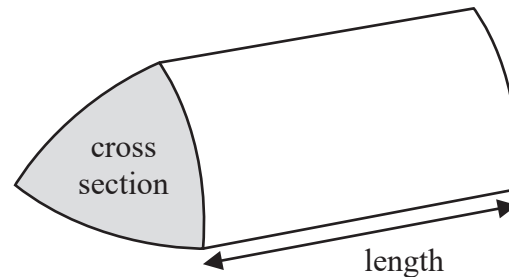
Area of triangle $= \frac{1}{2}ab \sin C$

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

Curved surface area of cone $= \pi r l$

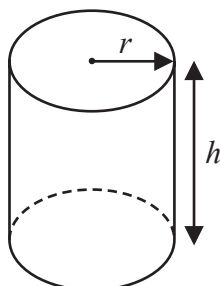
**Volume of prism**

$= \text{area of cross section} \times \text{length}$



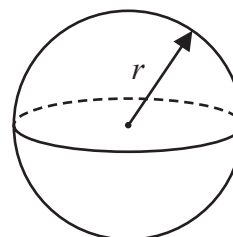
Volume of cylinder $= \pi r^2 h$

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



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

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



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Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1** Write 4500 as a product of powers of its prime factors.
Show your working clearly.

.....
(Total for Question 1 is 3 marks)



2 The n th term of an arithmetic sequence is given by $8n - 5$

- (a) Work out the ratio of the 40th term of the sequence to the 60th term of the sequence.
Give your ratio in its simplest form.

.....
(3)

Here are the first five terms of a different arithmetic sequence.

3 8 13 18 23

- (b) Find an expression for the n th term of this sequence.

.....
(2)

(Total for Question 2 is 5 marks)



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3 The table shows information about the number of hours each of 40 candles burned.

Number of hours (h)	Frequency
$15 < h \leq 19$	2
$19 < h \leq 23$	5
$23 < h \leq 27$	12
$27 < h \leq 31$	15
$31 < h \leq 35$	6

(a) Write down the modal class.

.....
(1)

(b) Work out an estimate for the mean number of hours.

..... hours
(4)

(Total for Question 3 is 5 marks)



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4 Sara sells water bottles.

In July, she sold 450 water bottles.
In August, she sold 612 water bottles.

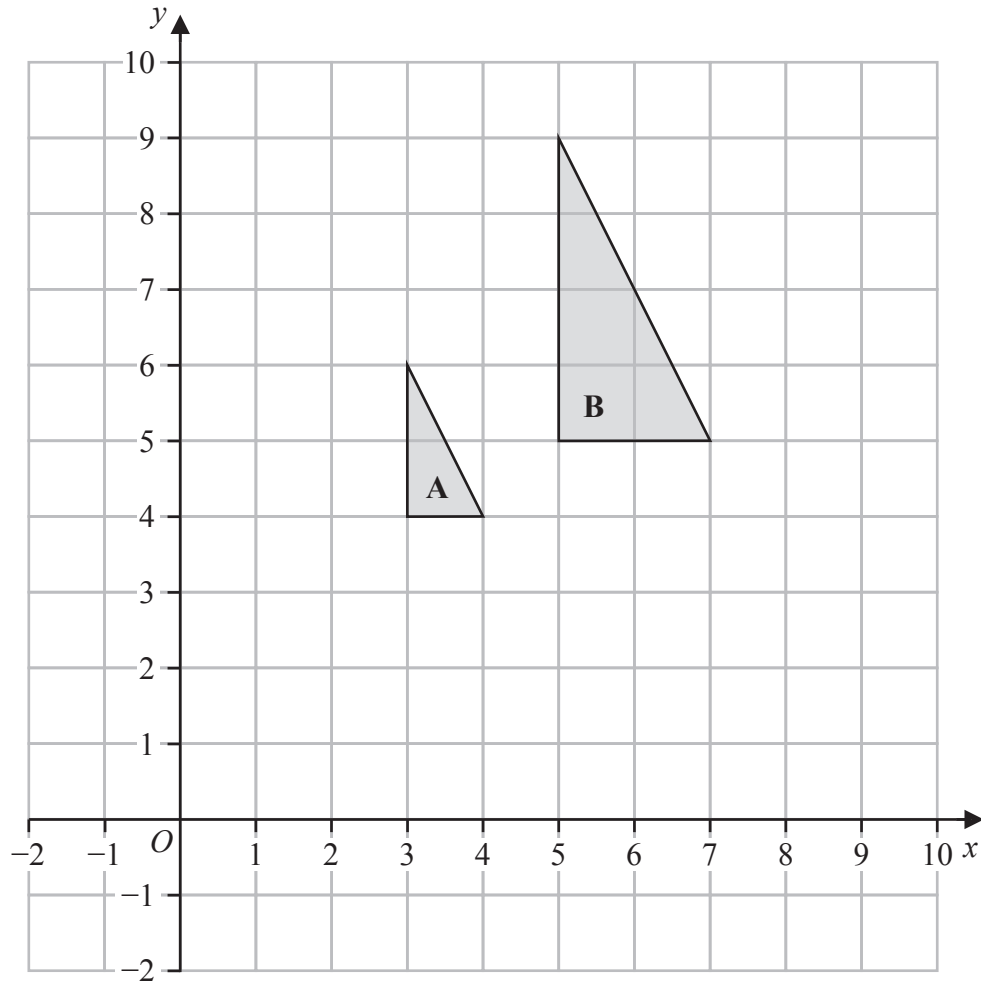
Work out the percentage increase in the number of water bottles she sold from July to August.

.....%

(Total for Question 4 is 3 marks)



5



- (a) Describe fully the single transformation that maps triangle **A** onto triangle **B**

(3)

- (b) On the grid, translate triangle **A** by the vector $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$

Label your triangle **C**

(1)

(Total for Question 5 is 4 marks)



P 8 1 0 6 4 A 0 7 3 2

6 $ABCDE$ is a pentagon.

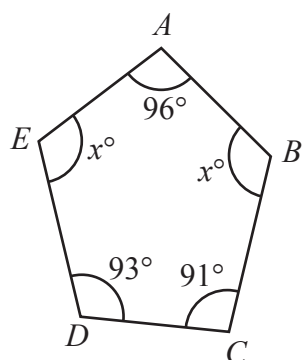


Diagram **NOT**
accurately drawn

angle $EAB = 96^\circ$ angle $BCD = 91^\circ$ angle $CDE = 93^\circ$ angle $DEA = \text{angle } ABC = x^\circ$

Work out the value of x

$x =$

(Total for Question 6 is 3 marks)



- 7 The diagram shows a cylinder and a prism.

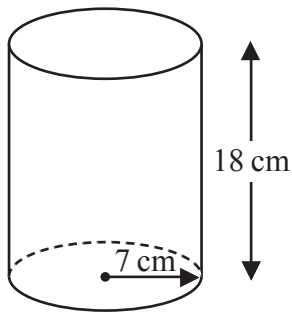
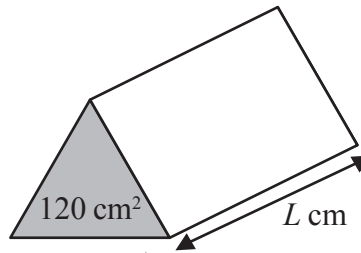


Diagram **NOT**
accurately drawn



The radius of the cylinder is 7 cm
The height of the cylinder is 18 cm

The area of the cross section of the prism, shown shaded in the diagram, is 120 cm^2
The length of the prism is $L \text{ cm}$

The volume of the cylinder is equal to the volume of the prism.

Work out the value of L
Give your answer correct to 3 significant figures.

$L = \dots\dots\dots$

(Total for Question 7 is 3 marks)



- 8 A golf club increases the cost of membership by 17%
After the increase, the cost of membership is 3276 zloty.

Work out the cost of membership before the increase.

..... zloty

(Total for Question 8 is 3 marks)

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9 (a) Find the value of $7n^0$ where $n > 0$

.....
(1)

(b) Simplify fully $(2m^5p^4)^3$

.....
(2)

(c) Factorise fully $18c^5w^2 + 30cw^3$

.....
(2)

(d) Factorise $x^2 + 6x - 27$

.....
(2)

(Total for Question 9 is 7 marks)



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10 Johan owns a car.

The current value of the car is 32 000 euros.
The value of the car will now depreciate by 15% per year.

Lena is going to save up and buy Johan’s car in 3 years’ time.
She has already saved 2516 euros.

She will save an equal amount of money each month for the next 3 years.

Work out how much money Lena needs to save each month.

..... euros

(Total for Question 10 is 4 marks)



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11 Find the highest prime number that is a factor of 3.6×10^{24}

(Total for Question 11 is 2 marks)

12 $\mathcal{E} = \{\text{integers } x \text{ such that } 20 \leq x \leq 32\}$

$A = \{x \text{ such that } x < 27\}$

$B = \{x \text{ such that } 25 \leq x \leq 30\}$

(a) List the members of the set $A \cap B$

(1)

(b) List the members of the set $(A \cup B)'$

(1)

(Total for Question 12 is 2 marks)



P 8 1 0 6 4 A 0 1 3 3 2

13 Leo collects apples from three trees.
The incomplete table gives some information about the apples he collects from these trees.

Tree	Number of apples	Mean weight of apples (grams)	Total weight of apples (grams)
A	12	150	
B	20		2700
C		145	2610

Work out the mean weight of all the apples Leo collects from these three trees.

..... grams

(Total for Question 13 is 4 marks)

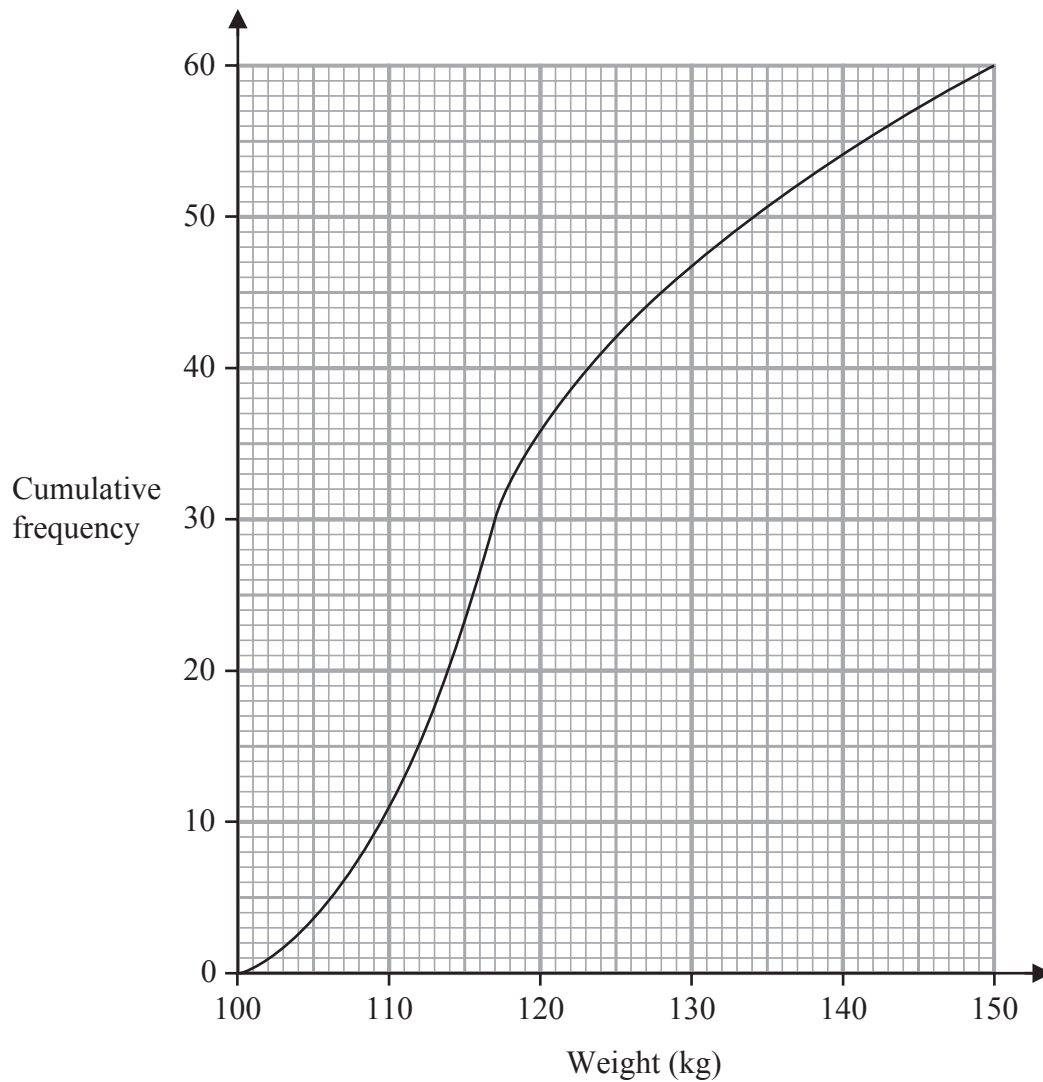
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- 14 The cumulative frequency graph gives information about the weights, in kg, of 60 crates.



- (a) Use the graph to find an estimate for the median weight.

..... kg
(1)

- (b) Use the graph to find an estimate for the interquartile range.

..... kg
(2)

(Total for Question 14 is 3 marks)



- 15 The diagram shows a sector $OABC$ of a circle, centre O

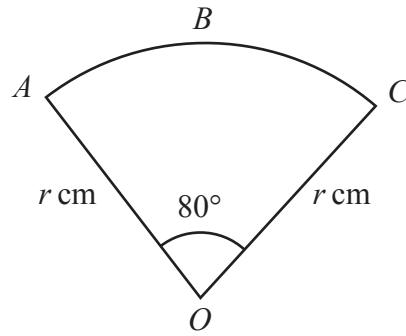


Diagram **NOT**
accurately drawn

$$OA = OC = r \text{ cm} \quad \text{angle } AOC = 80^\circ$$

The area of the sector $OABC$ is $32\pi \text{ cm}^2$

Work out the perimeter of the sector $OABC$
Give your answer correct to one decimal place.

..... cm

(Total for Question 15 is 4 marks)



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16 The functions f and g are such that

$$f(x) = 4 + x \qquad g(x) = 3x^2 + 2$$

(a) Find $g(4)$

.....
(1)

(b) Find $f^{-1}(7)$

.....
(2)

(c) Express $gf(x)$ in the form $ax^2 + bx + c$ where a , b and c are integers.

$gf(x) =$
(2)

(Total for Question 16 is 5 marks)



17 Use algebra to show that $0.5\dot{3}\dot{9} = \frac{89}{165}$

(Total for Question 17 is 2 marks)

18 Make x the subject of the formula $a = \frac{3w - x^2}{x^2 + 6}$

(Total for Question 18 is 4 marks)

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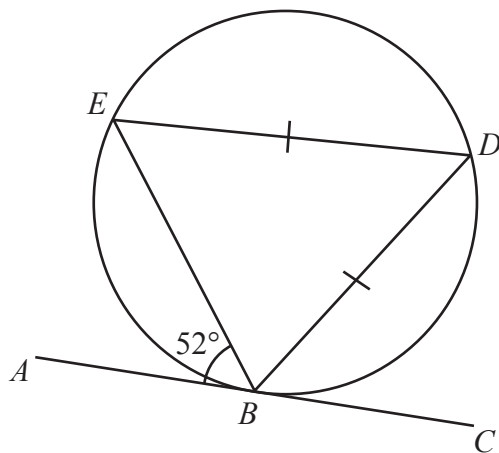
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19 B , D and E are points on a circle.

Diagram **NOT**
accurately drawn



ABC is the tangent to the circle at B

angle $ABE = 52^\circ$ $ED = BD$

Work out the size of angle BED

(Total for Question 19 is 2 marks)



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20 A box only contains green counters and red counters.

Nuno chooses at random a counter from the box.
He puts the counter back into the box.

Nuno then chooses at random a second counter from the box.

The probability that Nuno chooses at least one red counter is $\frac{39}{64}$

Work out the probability that Nuno chooses exactly one red counter.

(Total for Question 20 is 3 marks)

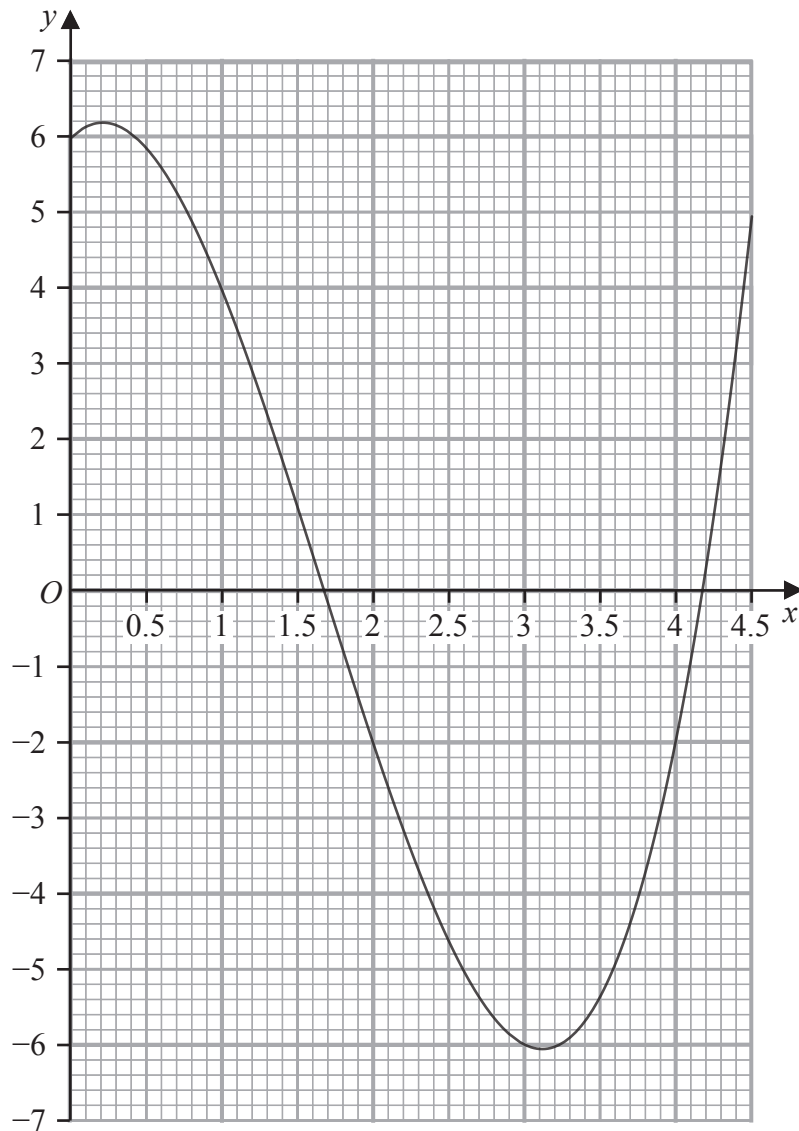


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TURN OVER FOR QUESTION 21



21 The curve with equation $y = f(x)$ is drawn on a grid.



- (a) By drawing a suitable straight line (at least 3 cm long) on the grid, work out an estimate for the gradient of the curve at the point where $x = 1$. Show your working clearly.

(2)



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(b) By drawing a suitable straight line on the grid, find the solutions
of the equation $x = 3 + \frac{1}{2}f(x)$
Show your working clearly.

.....
(3)

(Total for Question 21 is 5 marks)



- 22 The diagram shows a quadrilateral $OACB$ where O , A , B and C represent the positions of four houses.

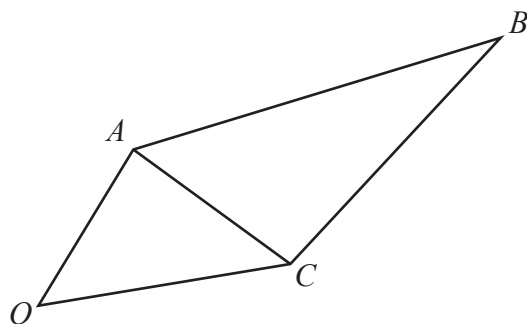


Diagram **NOT**
accurately drawn

$$\vec{OA} = \begin{pmatrix} 2 \\ 8 \end{pmatrix} \quad \vec{OB} = \begin{pmatrix} 21 \\ 14 \end{pmatrix} \quad \vec{OC} = \begin{pmatrix} 12 \\ 3 \end{pmatrix}$$

Ria walks directly from A to B

Anna walks directly from A to C and then walks directly from C to B

$\vec{OA}$, $\vec{OB}$ and $\vec{OC}$ are given in metres.

Work out how much further Anna walks than Ria walks.
Give your answer correct to one decimal place.

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..... metres

(Total for Question 22 is 4 marks)



23 The straight line **L** has equation $y = 3x - 2$

The curve **C** has equation $x^2 + y^2 - 2y = 12$

Find the coordinates of the points where **L** and **C** intersect.
Show clear algebraic working.

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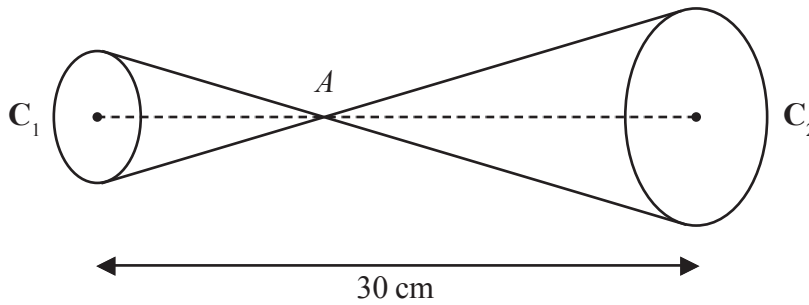
(.....,) and (.....,)

(Total for Question 23 is 5 marks)



24 The diagram shows two cones C_1 and C_2

Diagram **NOT**
accurately drawn



The vertex of C_1 coincides with the vertex of C_2 at the point A
 C_1 and C_2 have the same axis of symmetry.

$$\text{height of } C_1 + \text{height of } C_2 = 30 \text{ cm}$$

$$\text{total surface area of } C_1 : \text{total surface area of } C_2 = 4 : 9$$

$$\text{volume of } C_1 = 23.04\pi \text{ cm}^3$$

Work out the radius of the base of C_2
 Show your working clearly.

..... cm

(Total for Question 24 is 5 marks)



25 An arithmetic series has first term 3 and common difference 8

The n th term of the series is U_n

The sum of the first n terms of the series is S_n

Given that $S_{5k} - S_{3k} = 25\,560$

find the value of U_{4k}

Show clear algebraic working.

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(Total for Question 25 is 5 marks)

Turn over for Question 26



- 26 The curve **P** has equation $y = f(x)$
The coordinates of the minimum point on **P** are $(-5, 4)$

- (a) Write down the coordinates of the minimum point on the curve with equation $y = 3f(x)$

(.....,)
(1)

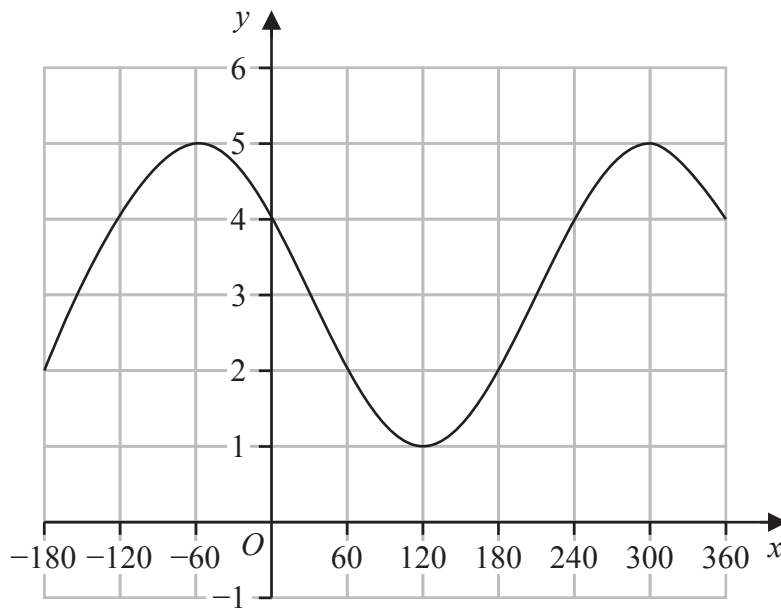
The curve **Q** has equation $y = 2 - (x + 3)^2$

The curve **R** has equation $y = 2 - (3 - x)^2$

- (b) Describe fully the single transformation that maps **Q** to **R**

(1)

The graph of $y = a \cos(x + b)^\circ + c$ for $-180 \leq x \leq 360$ is drawn on the grid.



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

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

 $a = \dots\dots\dots$
 $b = \dots\dots\dots$
 $c = \dots\dots\dots$

(3)

(Total for Question 26 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS



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