

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel International GCSE (9–1)

Thursday 14 May 2026

Morning (Time: 2 hours)

Paper reference **4WM1H/01R**

Mathematics A (Modular)

UNIT 1H

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 unit 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

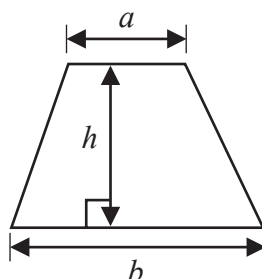
Sum to n terms, $S_n = \frac{n}{2} [2a + (n - 1)d]$

The quadratic equation

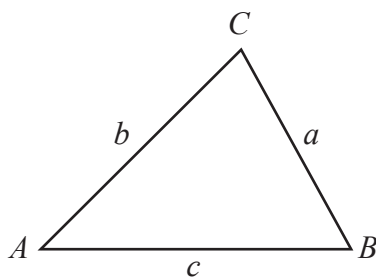
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

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

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



Trigonometry



In any triangle ABC

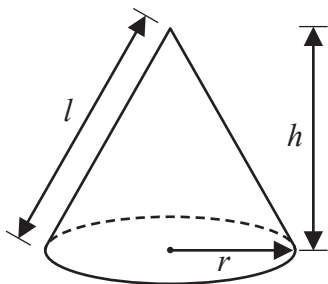
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

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

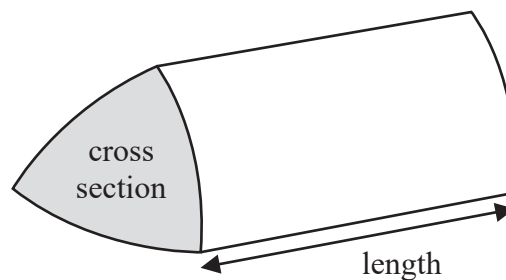
Volume of cone $= \frac{1}{3}\pi r^2 h$

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



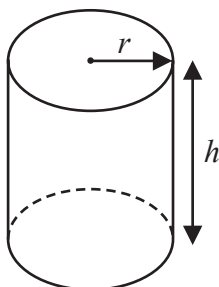
Volume of prism

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



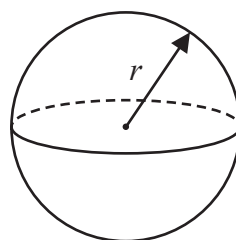
Volume of cylinder $= \pi r^2 h$

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



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

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



Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Show that $2\frac{4}{5} \times 3\frac{3}{7} = 9\frac{3}{5}$

(Total for Question 1 is 3 marks)

2 The weight of a giraffe is 1178 kg, correct to the nearest kg

(i) Write down the lower bound of the weight of the giraffe.

..... kg
(1)

(ii) Write down the upper bound of the weight of the giraffe.

..... kg
(1)

(Total for Question 2 is 2 marks)



3 (a) Factorise fully $8hm - 20m$

.....
(2)

(b) Solve $4x - 9 = \frac{7x - 6}{3}$

Show clear algebraic working.

$x =$
(3)

(Total for Question 3 is 5 marks)



4

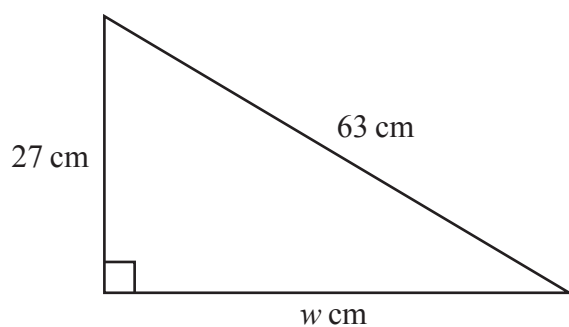


Diagram **NOT**
accurately drawn

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

$w =$

(Total for Question 4 is 3 marks)



- 5 A bag contains only blue counters, green counters, red counters and yellow counters.

Danny takes a counter at random from the bag.

The table gives information about the probabilities that he takes a blue counter or a green counter or a red counter or a yellow counter.

Colour	blue	green	red	yellow
Probability	0.45	0.31	$5x$	x

There are 400 counters in the bag.

Work out the number of red counters in the bag.

(Total for Question 5 is 4 marks)



6 $\mathcal{E} = \{10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20\}$

$A = \{\text{factors of } 60\}$

$B = \{\text{even numbers}\}$

$C = \{\text{multiples of } 3\}$

List the members of the set

(i) A'

(1)

(ii) $B \cup C$

(1)

(iii) $A \cap C$

(1)

(Total for Question 6 is 3 marks)

7 The density of a block of cheese is 1.75 grams/cm^3

The volume of the block of cheese is 200 cm^3

Work out the mass of the block of cheese.

..... grams

(Total for Question 7 is 2 marks)



- 8 The diagram shows a semicircle.

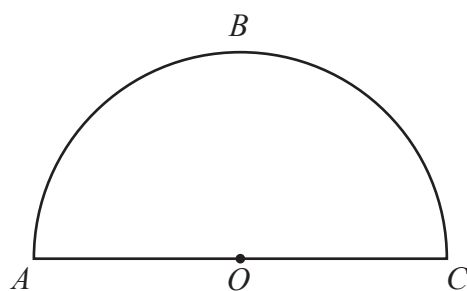


Diagram **NOT**
accurately drawn

AOC is the diameter of the semicircle.
The semicircular arc ABC has length 37 cm

Work out the area of the semicircle.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 8 is 4 marks)

9 (a) Factorise $x^2 + 2x - 48$

.....
(2)

(b) Hence, solve $x^2 + 2x - 48 = 0$

.....
(1)

(Total for Question 9 is 3 marks)



10 $2^{-16} \times 2^7 = 2^x$

(a) Find the value of x

$$x = \dots\dots\dots (1)$$

$$3^{-8} \div 3^2 = 3^y$$

(b) Find the value of y

$$y = \dots\dots\dots (1)$$

$$(5^{-6})^{-3} = 5^m$$

(c) Find the value of m

$$m = \dots\dots\dots (1)$$

$$7^n = 1$$

(d) Find the value of n

$$n = \dots\dots\dots (1)$$

(Total for Question 10 is 4 marks)



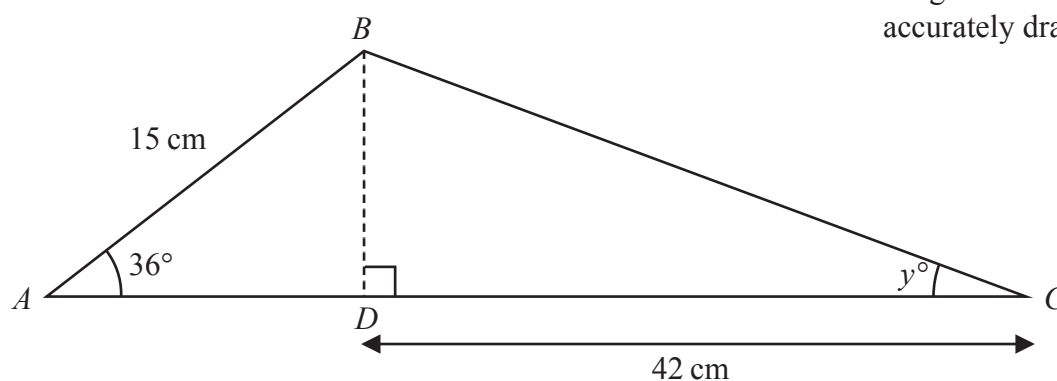
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11 The diagram shows triangle ABC

Diagram **NOT**
accurately drawn



D is the point on AC such that BD is perpendicular to AC

$$AB = 15 \text{ cm} \quad DC = 42 \text{ cm}$$

$$\text{angle } BAD = 36^\circ \quad \text{angle } BDC = 90^\circ \quad \text{angle } BCD = y^\circ$$

Work out the value of y

Give your answer correct to 3 significant figures.

$$y = \dots\dots\dots$$

(Total for Question 11 is 4 marks)



12 The straight line **L** has equation $4y - 10x - 5 = 0$

(a) Find the gradient of **L**

.....
(2)

(b) Find the coordinates of the point where **L** crosses the y -axis.

(.....,)
(1)

(Total for Question 12 is 3 marks)



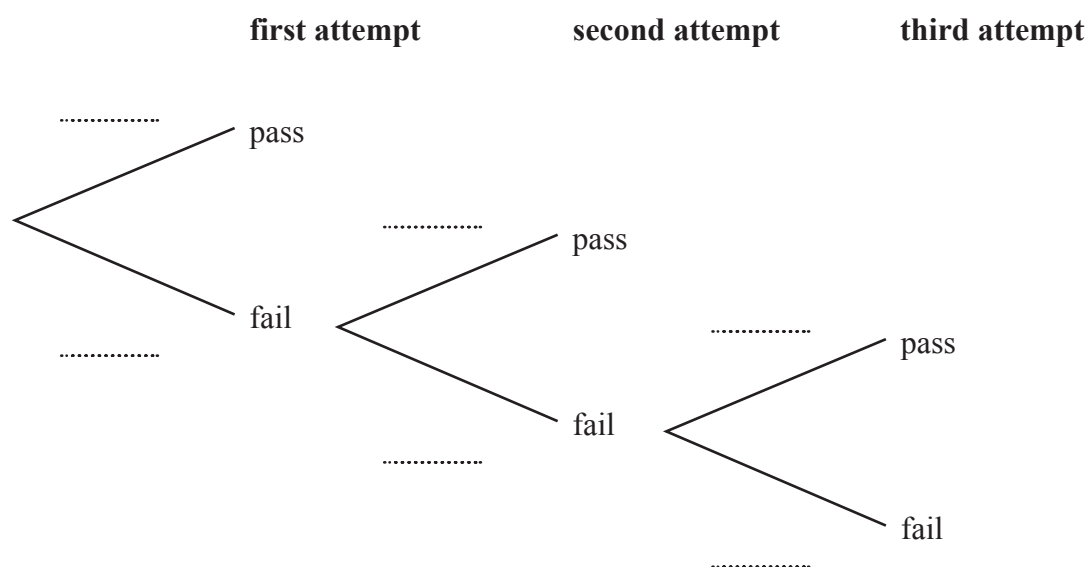
13 Emily takes a driving test.

The probability that Emily passes the driving test on her first attempt is 0.6

If Emily fails the driving test on her first attempt, then the probability that she passes on her second attempt is 0.7

If Emily fails the driving test on her second attempt, then the probability that she passes on her third attempt is 0.85

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Emily needs exactly three attempts to pass the driving test.

(2)

(Total for Question 13 is 4 marks)



14 (a) Express $\frac{5}{8} - \frac{x+2}{4x}$ as a single fraction in its simplest form.

(3)

(b) Expand and simplify $3x(2x - 1)(x + 4)$

(3)

(Total for Question 14 is 6 marks)



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15 (a) Factorise $9m^2 - 25$

Given that $\frac{\sqrt[4]{y^3} \times \sqrt[5]{y^2}}{\sqrt{y}} = y^n$

(b) work out the value of n

.....
(2)

$n =$
(3)

(Total for Question 15 is 5 marks)



16 The diagram shows a shape.

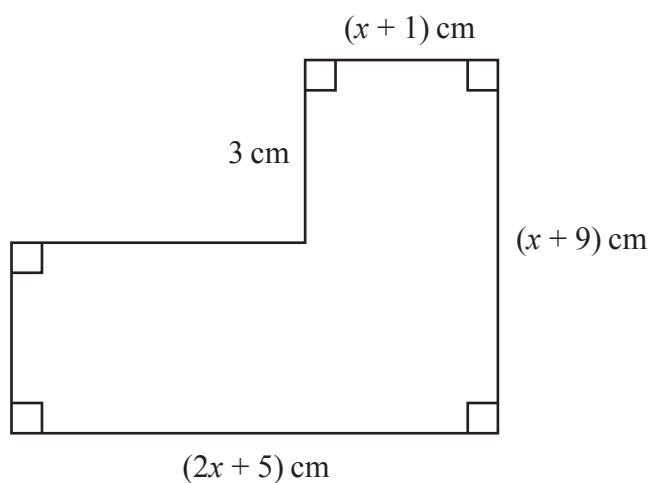


Diagram **NOT**
accurately drawn

The area of the shape is 169 cm^2

(a) Show that $x^2 + 10x - 68 = 0$

(3)

(b) Work out the value of x
Show your working clearly.
Give your answer correct to 3 significant figures.

$x = \dots\dots\dots$

(3)

(Total for Question 16 is 6 marks)

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17 OAD and OBC are sectors of a circle, centre O

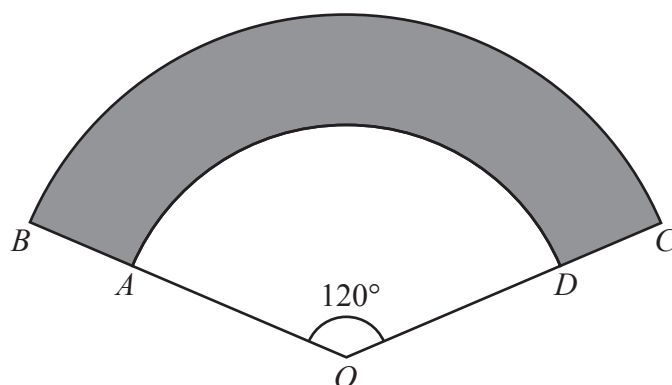


Diagram **NOT**
accurately drawn

The radius of sector OAD is $3x$ cm

The radius of sector OBC is $5x$ cm

angle $BOC = 120^\circ$

The area of the shaded region is 300π cm²

Work out the value of x

Show your working clearly.

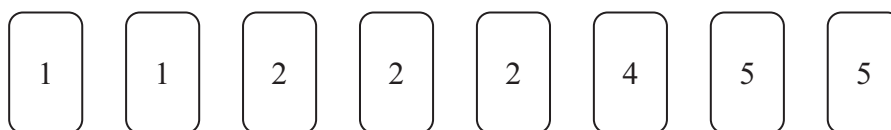
$x =$

(Total for Question 17 is 4 marks)



P 8 1 6 4 7 A 0 1 7 2 8

- 18 Here are 8 cards.
There is a number on each card.



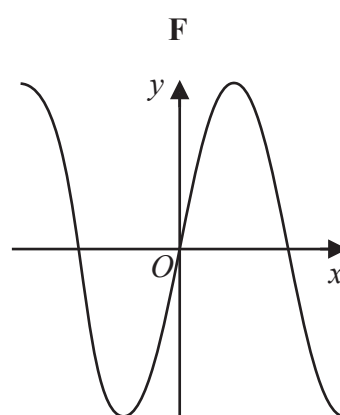
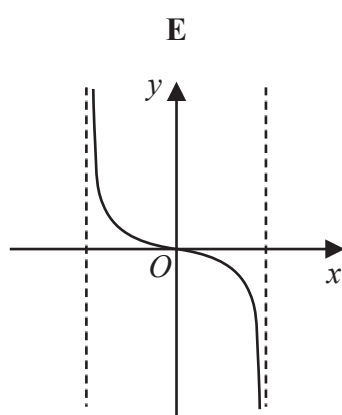
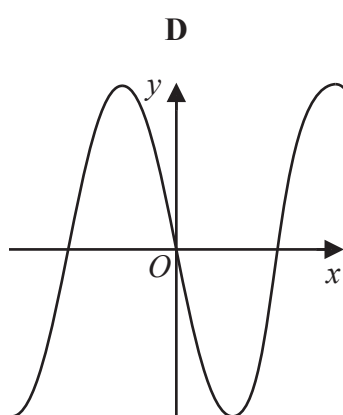
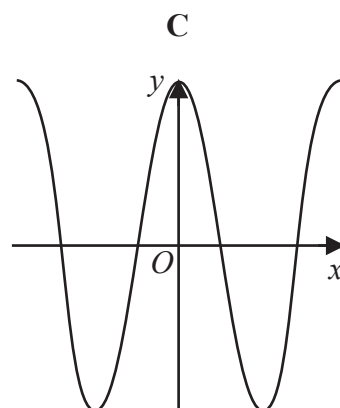
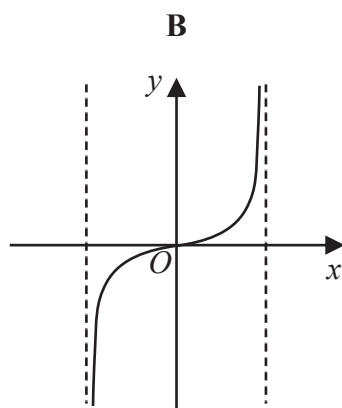
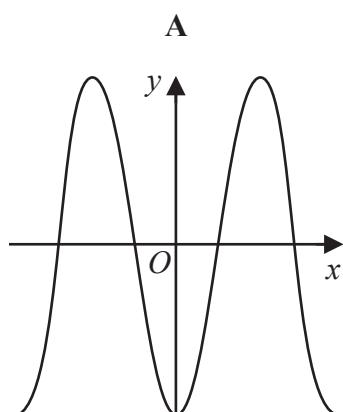
Gordon puts the 8 cards in a bag.
He takes at random a card from the bag and does not replace it.
Gordon then takes at random a second card from the bag.

Calculate the probability that the number on the second card is 3 more than the number on the first card.

(Total for Question 18 is 3 marks)



19 Here are six graphs.



Write down the letter of the graph of

(i) $y = \sin x$

.....
(1)

(ii) $y = \tan x$

.....
(1)

(Total for Question 19 is 2 marks)

20 60 students were asked if they study French (F), German (G) or Italian (I)

Of these students

32 students study French

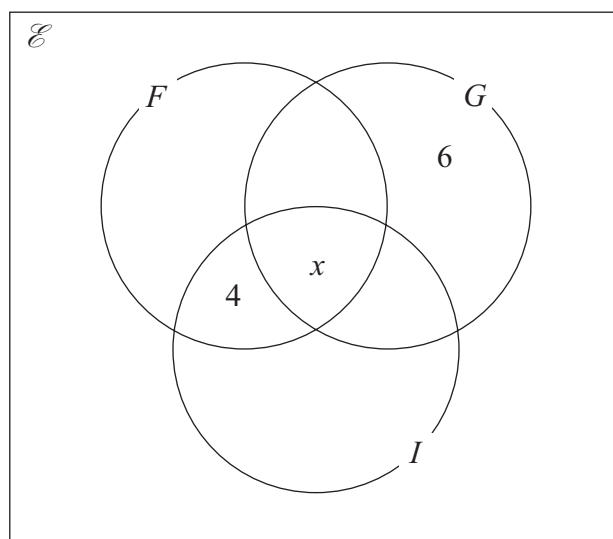
24 students study German

27 students study Italian

16 students study French and German

15 students study German and Italian

The incomplete Venn diagram gives some more information about the languages the 60 students study.



(a) Work out the value of x

$x =$ (3)

(b) Work out how many of the 60 students study none of French or German or Italian.

..... (2)

(Total for Question 20 is 5 marks)



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21 The diagram shows triangle ABC

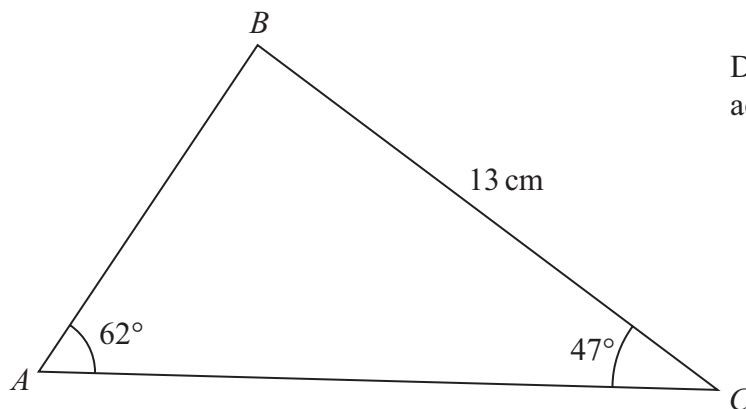


Diagram **NOT**
accurately drawn

Calculate the area of the triangle.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 21 is 4 marks)



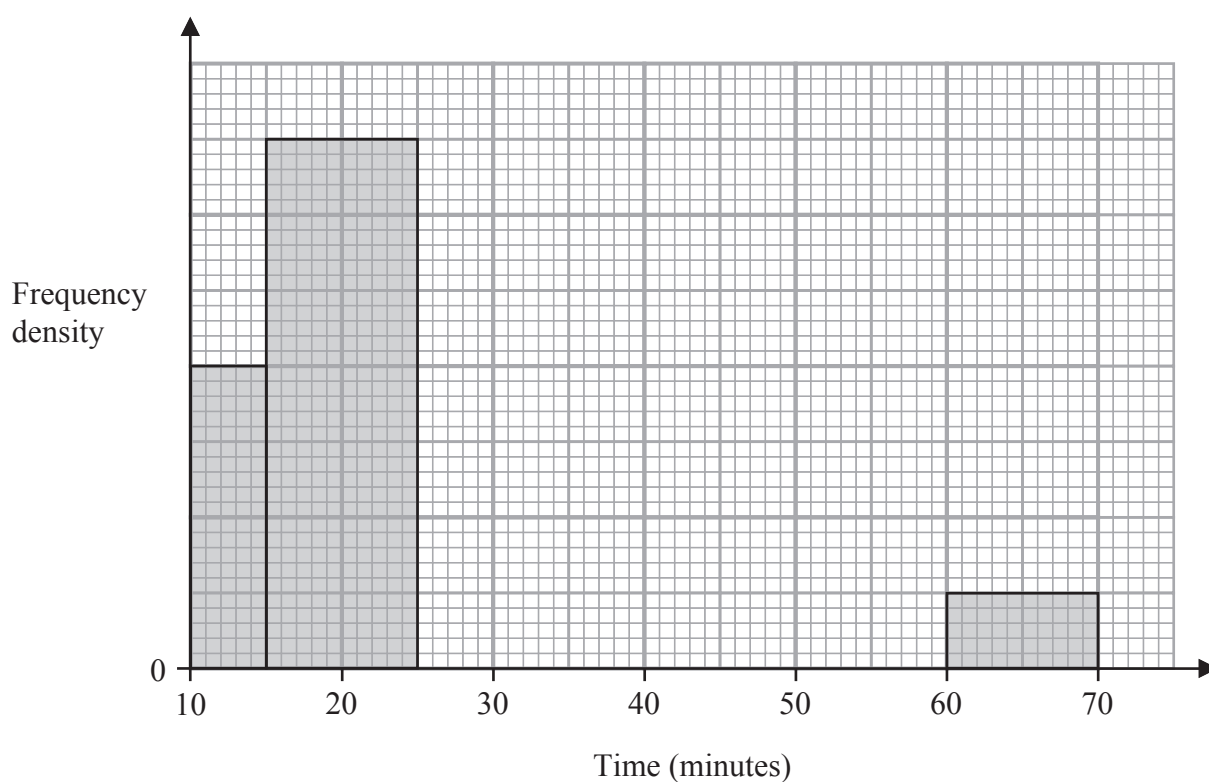
22 Express $4x^2 + 8x - 9$ in the form $a(x + b)^2 - c$ where a , b and c are integers.

.....
(Total for Question 22 is 3 marks)



- 23 The incomplete table and incomplete histogram give information about the times, in minutes, that some adults exercised on a bike.

Time (t minutes)	Frequency
$10 < t \leq 15$	10
$15 < t \leq 25$	
$25 < t \leq 40$	45
$40 < t \leq 60$	24
$60 < t \leq 70$	



Using the information in the table and in the histogram,

- (i) complete the table, (2)

- (ii) complete the histogram. (2)

(Total for Question 23 is 4 marks)

24 [In this question 1 cm = 1 unit on the x -axis and 1 cm = 1 unit on the y -axis]

$PQRS$ is a rectangle with sides PQ , QR , RS and SP

The point P has coordinates $(-3, 7)$

The point Q has coordinates $(n, n + 4)$ where $n > 0$

Given that $PQ = \sqrt{68}$ cm

find an equation of the line that passes through Q and R

Give your answer in the form $ax + by + c = 0$ where a , b and c are integers.

Show clear algebraic working.



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.....
(Total for Question 24 is 6 marks)

Turn over for Question 25



25 The diagram shows a prism $ACDEJFHI$

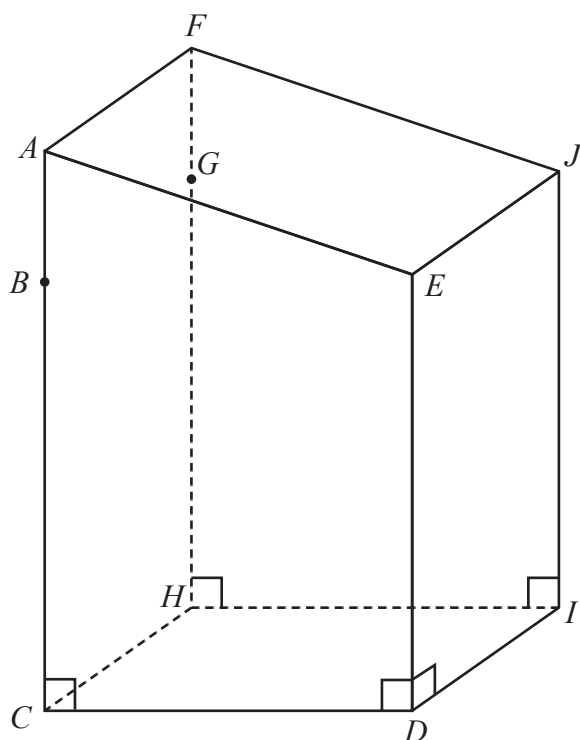


Diagram **NOT**
accurately drawn

$CDIH$ is a rectangle.
 $ACDE$ is a trapezium.

B is a point on AC and G is a point on FH such that

$$BC = ED = GH = JI \quad BA = GF$$

$$CD = 36 \text{ cm} \quad DI = 15 \text{ cm} \quad GD = 89 \text{ cm} \quad \text{angle } GEF = 30^\circ$$

Work out the size of angle HDF

Give your answer correct to 3 significant figures.

Show your working clearly.



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(Total for Question 25 is 5 marks)

Turn over for Question 26



$$\frac{27^x \times 3^{n+6}}{9^{4-n}} = \frac{6^x}{2^x}$$

Express x in terms of n

Show your working clearly and simplify your expression.

$x =$

(Total for Question 26 is 3 marks)

TOTAL FOR UNIT IS 100 MARKS

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