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Elite Mathematics
Pearson Edexcel International GCSE

IGCSE LINEAR · 4MA1

4WM1/01 November 2025 Worked Solutions

November 2025 paper rebuilt with the worked solution after each question.

28	2020–2026	Single-paper solutions
paper questions	52 past papers	checked by Dr Eslam



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PAST PAPER

4WM1/01 November 2025

November 2025

28	100	2 h
questions	marks	exam time

Each question is followed by its worked solution and final answer.

4WM1/01 NOVEMBER 2025

Question 1

2 marks | Perimeter & Area

1 The diagram shows a semicircle.

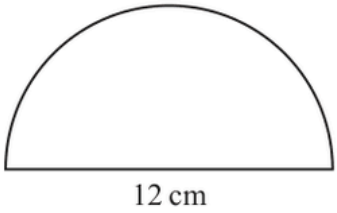


Diagram **NOT** accurately drawn

The semicircle has diameter 12 cm

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

..... cm

(Total for Question 1 is 2 marks)

WORKED SOLUTION

Question 1 · 4WM1/01 November 2025

1 **Radius cm**

Radius $= 6$ cm.

$$\text{perimeter} = \pi r + 12 = 6\pi + 12 \approx 30.8496$$

FINAL ANSWER

30.8 cm to 3 significant figures.

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Question 2

2 marks | Rounding, Estimation & Bounds

2 By rounding each number to one significant figure, work out an estimate for the value of

$$\frac{2.11^2 \times 58.9}{\sqrt{8.859}}$$

Show your working clearly.

(Total for Question 2 is 2 marks)

WORKED SOLUTION

Question 2 · 4WM1/01 November 2025

1 Round each number to one

Round each number to one significant figure:

$$2.11 \approx 2, \quad 58.9 \approx 60, \quad 8.859 \approx 9$$

$$\frac{2.11^2 \times 58.9}{\sqrt{8.859}} \approx \frac{2^2 \times 60}{\sqrt{9}}$$

$$= \frac{4 \times 60}{3} = 80$$

FINAL ANSWER

80

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Question 3

3 marks | Fractions

3 Show that $3\frac{5}{7}+1\frac{2}{3}=5\frac{8}{21}$

(Total for Question 3 is 3 marks)

WORKED SOLUTION

Question 3 · 4WM1/01 November 2025

1 Evaluate fraction

$$\frac{3}{7}+\frac{1}{3}$$

2 Use denominator 21

Use denominator 21:

$$\frac{3}{7}=\frac{9}{21},\qquad \frac{1}{3}=\frac{7}{21}$$

$$\frac{9}{21}+\frac{7}{21}=\frac{16}{21}$$

FINAL ANSWER

$\frac{16}{21}$.

Question 4

4 marks | Set Notation & Venn Diagrams

4 $\mathscr{E} = \{8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18\}$
$A = \{\text{odd numbers}\}$
$B = \{\text{multiples of 3}\}$
$C = \{\text{prime numbers}\}$

(a) List the members of the set $A \cup C$

.....

(1)

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

.....

(1)

(c) Is it true that $15 \in (B \cap C)$?

Tick (✓) the correct box.

Yes	No
☐	☐

Give a reason for your answer.

.....

(1)

D is a set such that $D \cup C = A$
D has 2 members.

(d) List the members of D

.....

(1)

(Total for Question 4 is 4 marks)

1 **Calculate value**

$$A = \{9, 11, 13, 15, 17\}, \quad B = \{9, 12, 15, 18\}, \quad C = \{11, 13, 17\}$$

$$A \cup C = \{9, 11, 13, 15, 17\}$$

$$A \cap B' = \{11, 13, 17\}$$

2 **Check prime condition**

$15 \notin B \cap C$ because 15 is not prime.

3 **Calculate value**

Since $D \cup C = A$ and D has two members,

$$D = \{9, 15\}$$

FINAL ANSWER

$\{9, 11, 13, 15, 17\}$, $\{11, 13, 17\}$, No, $D = \{9, 15\}$.

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Question 5

5 marks | Probability Toolkit

5 All students at a school are asked which sport they prefer from football, tennis, rugby and cricket.

The table gives information about the probabilities that, when a student is chosen at random, the student prefers football or tennis or rugby or cricket.

Favourite sport	football	tennis	rugby	cricket
Probability	$2x$	0.2	x	0.35

One of the students at the school is chosen at random.

(a) Work out the probability that this student prefers tennis or cricket.

.....

(1)

There are 700 students at the school.

(b) Work out how many students prefer football.

.....

(4)

(Total for Question 5 is 5 marks)

WORKED SOLUTION

Question 5 · 4WM1/01 November 2025

1 **Calculate value**

$$P(\text{tennis or cricket}) = 0.2 + 0.35 = 0.55$$

2 **Calculate value**

Also,

$$2x + 0.2 + x + 0.35 = 1$$

$$3x = 0.45$$

$$x = 0.15$$

3 **Calculate value**

So

$$P(\text{football}) = 2x = 0.30$$

$$700 \times 0.30 = 210$$

✓ **FINAL ANSWER**

0.55, 210 students.

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Question 6

2 marks | Rounding, Estimation & Bounds

6 The weight of a bag of apples is 475 g correct to the nearest g

(a) Write down the lower bound of the weight.

..... g

(1)

The height of a box is 120 cm correct to the nearest 10 cm

(b) Write down the upper bound for the height.

..... cm

(1)

(Total for Question 6 is 2 marks)

WORKED SOLUTION

Question 6 · 4WM1/01 November 2025

1 Find lower bound

The weight 475 g correct to the nearest g has lower bound

$$475 - 0.5 = 474.5$$

2 Find upper bound

The height 120 cm correct to the nearest 10 cm has upper bound

$$120 + 5 = 125$$

FINAL ANSWER

(a) 474.5 g, (b) 125 cm

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Question 7

2 marks | Algebraic Roots & Indices

7 $\dfrac{8^{-2} \times 8^{9}}{8^{10}} = 8^{n}$

Work out the value of n

$n =$ .....

(Total for Question 7 is 2 marks)

WORKED SOLUTION

Question 7 · 4WM1/01 November 2025

1 **Use index laws**

$$\frac{8^{-2} \times 8^{9}}{8^{10}} = 8^{-2+9-10} = 8^{-3}$$

FINAL ANSWER

$n = -3$

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Question 8

9 marks | Factorising

8 (a) Expand $5w(3w - 4w^2)$

.....

(2)

(b) Simplify fully $\left(4a^3c^5\right)^3$

.....

(2)

(c) Factorise fully $14m^3p^2 + 21m^2p^4$

.....

(2)

(d) (i) Factorise $x^2 - 10x + 24$

.....

(2)

(ii) Hence solve $x^2 - 10x + 24 = 0$

.....

(1)

(Total for Question 8 is 9 marks)

WORKED SOLUTION

Question 8 · 4WM1/01 November 2025

1 **(a)**

(a)

$$5w(3w - 4w^2) = 15w^2 - 20w^3$$

2 **(b)**

(b)

$$(4a^3c^5)^3 = 64a^9c^{15}$$

3 **(c)**

(c)

$$14m^3p^2 + 21m^2p^4 = 7m^2p^2(2m + 3p^2)$$

4 **(d)**

(d)

$$x^2 - 10x + 24 = (x - 4)(x - 6)$$

---

5 **Calculate value**

So

$$x = 4 \quad \text{or} \quad x = 6$$

✓ **FINAL ANSWER**

$15w^2 - 20w^3$, $64a^9c^{15}$, $7m^2p^2(2m + 3p^2)$, $(x - 4)(x - 6)$, $x = 4, 6$.

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Question 9

4 marks | Right-Angled Triangles - Pythagoras & Trigonometry

9 The diagram shows a sketch of a right-angled triangle, ABC

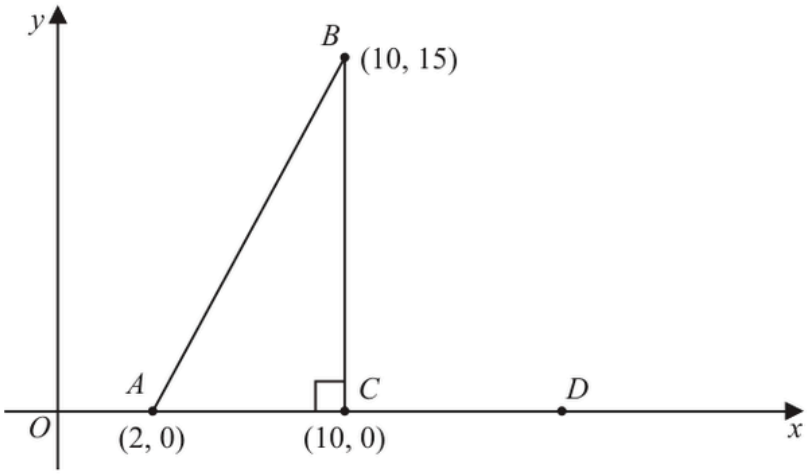


Diagram **NOT** accurately drawn

A is the point with coordinates $(2, 0)$
B is the point with coordinates $(10, 15)$
C is the point with coordinates $(10, 0)$

D is a point on the x-axis such that $AB = AD$

Find the coordinates of D

(..... , ...)

(Total for Question 9 is 4 marks)

WORKED SOLUTION

Question 9 · 4WM1/01 November 2025

1 **Simplify surd**

$$AB = \sqrt{(10-2)^2 + (15-0)^2}$$

$$= \sqrt{64 + 225} = 17$$

2 **Calculate value**

Since D is on the positive x-axis and $AD = 17$,

$$D = (2 + 17, 0) = (19, 0)$$

FINAL ANSWER

$(19, 0)$.

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Question 10

3 marks | Standard & Compound Units

10 A parcel in the shape of a cube is placed on a table so that the whole of one face of the parcel is in contact with the table.

The parcel has sides of length 7 cm

The pressure on the table due to the parcel is 62 newtons/cm^2

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the force exerted by the parcel on the table.

..... newtons

(Total for Question 10 is 3 marks)

WORKED SOLUTION

Question 10 · 4WM1/01 November 2025

1 **The contact area is one**

The contact area is one square face:

$$7 \times 7 = 49 \text{ cm}^2$$

$$\text{force} = \text{pressure} \times \text{area} = 62 \times 49 = 3038$$

FINAL ANSWER

3038 newtons.

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Question 11

4 marks | Right-Angled Triangles - Pythagoras & Trigonometry

11 ABC is a right-angled triangle.

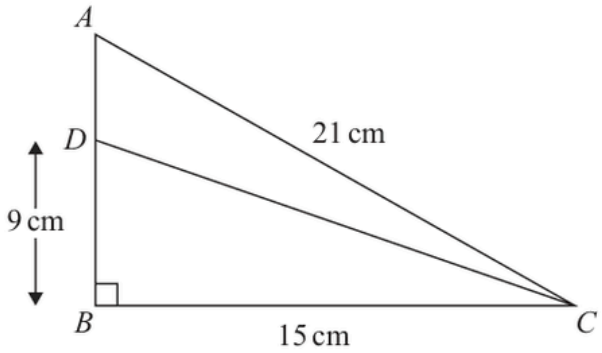


Diagram **NOT** accurately drawn

$AC = 21$ cm $BC = 15$ cm angle $ABC = 90°$

The point D lies on AB such that $DB = 9$ cm

Work out the size of angle ACD
Give your answer correct to one decimal place.

.....°

(Total for Question 11 is 4 marks)

WORKED SOLUTION

Question 11 · 4WM1/01 November 2025

1 **Use trigonometry**

First find AB:

$$AB^2 = 21^2 - 15^2 = 216$$

$$AB = 14.696\ldots$$

$$AD = AB - DB = 14.696\ldots - 9 = 5.696\ldots$$

2 **Angle**

Angle ACB:

$$\cos ACB = \frac{15}{21}$$

$$ACB = 44.415\ldots°$$

3 **Angle**

Angle DCB:

$$\tan DCB = \frac{9}{15}$$

$$DCB = 30.963\ldots^\circ$$

$$ACD = 44.415\ldots - 30.963\ldots = 13.451\ldots^\circ$$

✓ **FINAL ANSWER**

13.5°.

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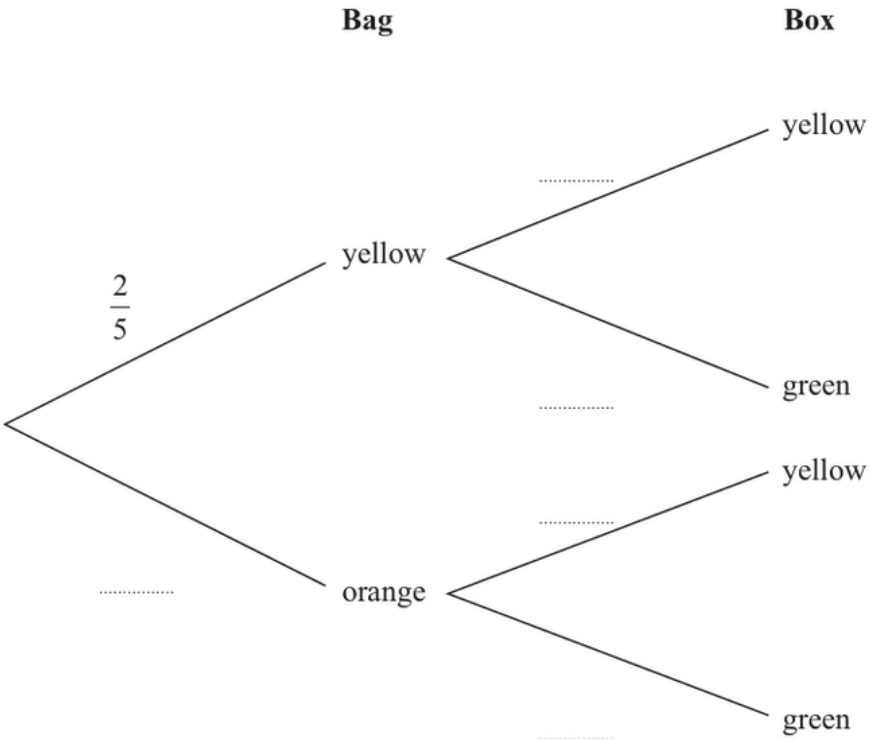
Question 12

5 marks | Tree Diagrams & Conditional Probability

12 In a bag, there are only 2 yellow beads and 3 orange beads.
In a box, there are only 3 yellow beads and 5 green beads.

Chi takes at random a bead from the bag and a bead from the box.

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Chi takes two beads of different colours.

.....

(3)

(Total for Question 12 is 5 marks)

WORKED SOLUTION

Question 12 · 4WM1/01 November 2025

1 **Bag 1**

Bag 1:

$$P(Y) = \frac{2}{5}, \qquad P(O) = \frac{3}{5}$$

2 **Bag 2**

Bag 2:

$$P(Y) = \frac{3}{8}, \qquad P(G) = \frac{5}{8}$$

---

3 **The only way to get**

The only way to get the same colour is yellow then yellow.

$$P(\text{different}) = 1 - \frac{2}{5} \times \frac{3}{8}$$

$$= 1 - \frac{3}{20} = \frac{17}{20}$$

✓ **FINAL ANSWER**

$\frac{17}{20}$.

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Question 13

6 marks | Expanding Brackets

13 (a) Expand and simplify $7x(3x + 2)(2x - 5)$

.....

(3)

(b) Solve $\frac{9}{2y} + \frac{5}{7} = 5$

Show clear algebraic working.

$y =$ .....

(3)

(Total for Question 13 is 6 marks)

WORKED SOLUTION

Question 13 · 4WM1/01 November 2025

1 **(a)**

(a)

$$7x(3x + 2)(2x - 5)$$

$$= 7x(6x^2 - 11x - 10)$$

$$= 42x^3 - 77x^2 - 70x$$

2 **(b)**

(b)

$$\frac{9}{2y} + \frac{5}{7} = 5$$

$$\frac{9}{2y} = \frac{30}{7}$$

$$63 = 60y$$

$$y = \frac{21}{20}$$

FINAL ANSWER

$42x^3 - 77x^2 - 70x$, $y = \frac{21}{20}$.

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Question 14

2 marks | Circles, Arcs & Sectors

14 AOB is a sector of a circle with centre O and radius 12 cm

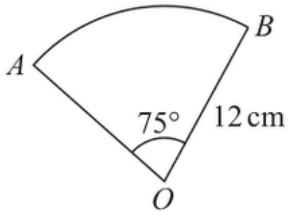


Diagram **NOT** accurately drawn

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

..... cm^2

(Total for Question 14 is 2 marks)

WORKED SOLUTION

Question 14 · 4WM1/01 November 2025

1 Calculate area

$$\text{area} = \frac{75}{360}\pi(12)^2$$

$$= 30\pi \approx 94.2478$$

FINAL ANSWER

$94.2\ \text{cm}^2$ to 3 significant figures.

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Question 15

3 marks | Algebraic Roots & Indices

15 $\dfrac{16^{x-3} \times 8^{x+1}}{32^x} = 2^n$

Express n in terms of x
Give your answer in its simplest form.

$n =$ .....

(Total for Question 15 is 3 marks)

WORKED SOLUTION

Question 15 · 4WM1/01 November 2025

1 Evaluate fraction

$$\frac{16^{x-3} \times 8^{x+1}}{32^x} = \frac{2^{4x-12} \times 2^{3x+3}}{2^{5x}}$$

$$= 2^{4x-12+3x+3-5x} = 2^{2x-9}$$

FINAL ANSWER

$n = 2x - 9$.

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Question 16

3 marks | Surds

16 Show that $\dfrac{2\sqrt{7}+2}{\sqrt{7}-3}$ can be written in the form $a-\sqrt{b}$ where a and b are integers.

Show your working clearly.

(Total for Question 16 is 3 marks)

WORKED SOLUTION

Question 16 · 4WM1/01 November 2025

1 **Simplify surd**

$$\frac{2\sqrt{7}+2}{\sqrt{7}-3}\times\frac{\sqrt{7}+3}{\sqrt{7}+3}$$

$$=\frac{(2\sqrt{7}+2)(\sqrt{7}+3)}{7-9}$$

$$=\frac{20+8\sqrt{7}}{-2}$$

$$=-10-4\sqrt{7}=-10-\sqrt{112}$$

FINAL ANSWER

$-10-\sqrt{112}$.

4WM1/01 NOVEMBER 2025

Question 17

2 marks | Algebraic Proof

17 Use algebra to show that $0.95\dot{4}\dot{5} = \frac{21}{22}$

(Total for Question 17 is 2 marks)

WORKED SOLUTION

Question 17 · 4WM1/01 November 2025

1 Let

Let

$$x = 0.95454545\ldots$$

2 Calculate value

Then

$$10x = 9.5454545\ldots$$

3 Calculate value

and

$$1000x = 954.5454545\ldots$$

4 Subtract

Subtract:

$$990x = 945$$

$$x = \frac{945}{990} = \frac{21}{22}$$

FINAL ANSWER

$0.954545\ldots = \frac{21}{22}$.

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Question 18

4 marks | Perimeter & Area

18 The diagram shows a rectangle.

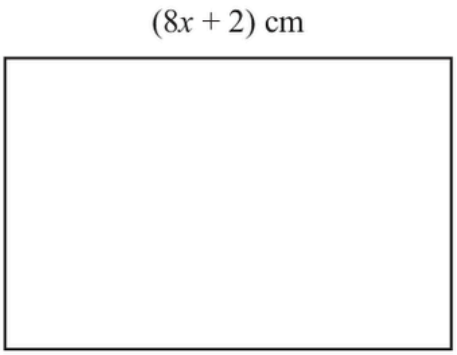


Diagram **NOT** accurately drawn

The rectangle has length $(8x + 2)$ cm and width $(3x - 2)$ cm
The area of the rectangle is $500\ \text{cm}^2$

(a) Show that $12x^2 - 5x - 252 = 0$

(1)

(b) Hence find the value of x
Give your answer correct to 3 significant figures.

$x =$ .....

(3)

(Total for Question 18 is 4 marks)

WORKED SOLUTION

Question 18 · 4WM1/01 November 2025

1 Calculate value

$$(8x + 2)(3x - 2) = 500$$

$$24x^2 - 10x - 4 = 500$$

$$12x^2 - 5x - 252 = 0$$

2 Solve quadratic equation

Using the quadratic formula,

$$x = \frac{5 \pm \sqrt{(-5)^2 - 4(12)(-252)}}{24}$$

3 **The positive solution is**

The positive solution is

$$x \approx 4.79564$$

✓ **FINAL ANSWER**

$x = 4.80$ to 3 significant figures.

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Question 19

3 marks | Sine & Cosine Rules

19 The diagram shows triangle ABC

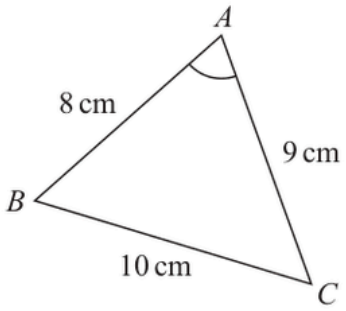


Diagram **NOT** accurately drawn

$AB = 8\,\text{cm}$ $BC = 10\,\text{cm}$ $CA = 9\,\text{cm}$

Work out the size of angle BAC
Give your answer correct to one decimal place.

.....°

(Total for Question 19 is 3 marks)

WORKED SOLUTION

Question 19 · 4WM1/01 November 2025

1 **Use cosine rule**

Use the cosine rule for angle BAC:

$$\cos A = \frac{8^2 + 9^2 - 10^2}{2(8)(9)}$$

$$\cos A = \frac{45}{144}$$

$$A = 71.790\ldots^\circ$$

FINAL ANSWER

71.8°.

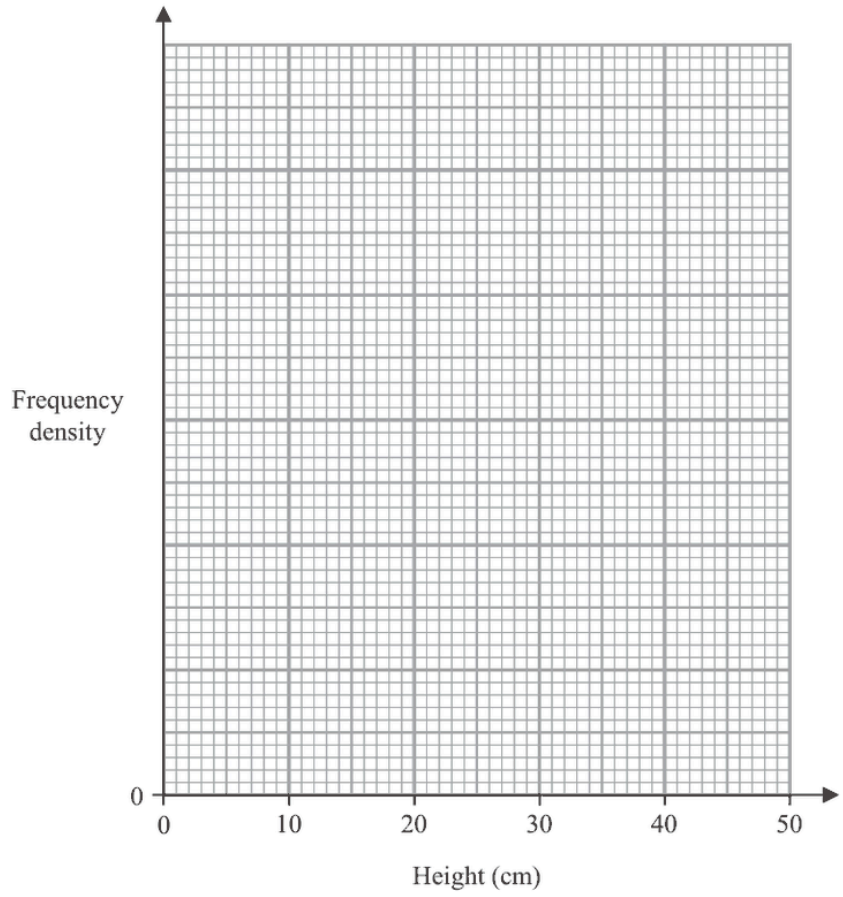
Question 20

3 marks | Histograms

20 The table gives information about the heights, in centimetres, of some plants.

Height (h cm)	Frequency
$0 < h \leqslant 5$	12
$5 < h \leqslant 15$	34
$15 < h \leqslant 30$	45
$30 < h \leqslant 50$	28

On the grid, draw a histogram for this information.
You must include a scale on the vertical axis.



(Total for Question 20 is 3 marks)

1 Frequency density

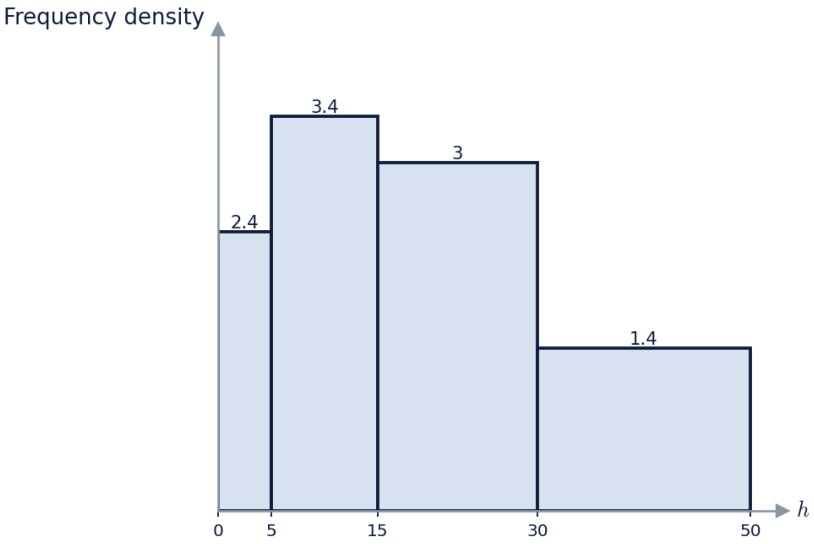
Frequency density $= \dfrac{\text{frequency}}{\text{class width}}$.

$$0 < h \leq 5 : \frac{12}{5} = 2.4$$

$$5 < h \leq 15 : \frac{34}{10} = 3.4$$

$$15 < h \leq 30 : \frac{45}{15} = 3$$

$$30 < h \leq 50 : \frac{28}{20} = 1.4$$



FINAL ANSWER

draw bars with densities $2.4, 3.4, 3, 1.4$.

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Question 21

4 marks | Perimeter & Area

21 The diagram shows an equilateral triangle and a circle.

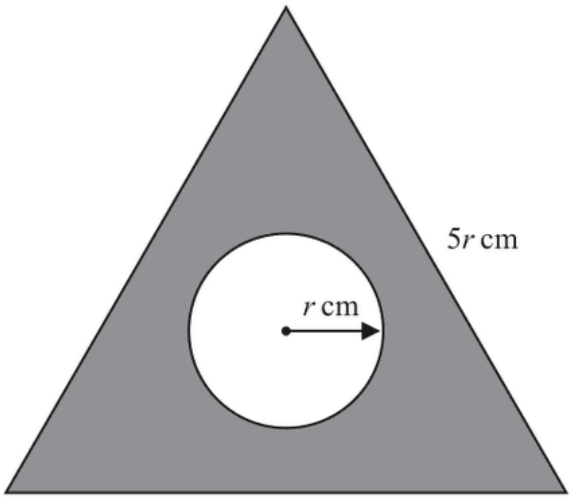


Diagram **NOT** accurately drawn

The equilateral triangle has sides of length $5r$ cm
The circle has radius r cm

The area of the shaded region is 610π cm^2
Work out the value of r

Give your answer correct to 3 significant figures.

$r =$ .....

(Total for Question 21 is 4 marks)

WORKED SOLUTION

Question 21 · 4WM1/01 November 2025

1 **Triangle area**

Triangle area:

$$\frac{\sqrt{3}}{4}(5r)^2 = \frac{25\sqrt{3}}{4}r^2$$

2 **Circle area**

Circle area:

$$\pi r^2$$

3 **Simplify surd**

So

$$\left(\frac{25\sqrt{3}}{4} - \pi\right) r^2 = 610\pi$$

$$r \approx 15.7926$$

FINAL ANSWER

$r = 15.8$ to 3 significant figures.

4WM1/01 NOVEMBER 2025

Question 22

2 marks | Completing the Square

22 $9x^2 - 12x + q$ can be written in the form $(px - r)^2$ where p, q and r are integers.

Find the value of q

$q =$ .....

(Total for Question 22 is 2 marks)

WORKED SOLUTION

Question 22 · 4WM1/01 November 2025

1 **Calculate value**

$$9x^2 - 12x + q = (3x - 2)^2$$

$$(3x - 2)^2 = 9x^2 - 12x + 4$$

FINAL ANSWER

$q = 4$.

4WM1/01 NOVEMBER 2025

Question 23

3 marks | Tree Diagrams & Conditional Probability

23 There are 15 buttons in a box.

3 of the buttons are red
2 of the buttons are pink
10 of the buttons are blue

Pete takes at random three buttons from the box.

Work out the probability that there is still at least one pink button in the box.

(Total for Question 23 is 3 marks)

WORKED SOLUTION

Question 23 · 4WM1/01 November 2025

1 There are 2 pink buttons

There are 2 pink buttons.

2 At least one pink button

At least one pink button is still in the box unless both pink buttons are taken.

3 Use the complement

So use the complement.

4 The probability that both pink

The probability that both pink buttons are taken is

$$\frac{\binom{2}{2}\binom{13}{1}}{\binom{15}{3}}$$

$$= \frac{13}{455}$$

$$= \frac{1}{35}$$

5 **Evaluate fraction**

Therefore,

$$P(\text{at least one pink is still in the box}) = 1 - \frac{1}{35}$$

$$= \frac{34}{35}$$

✓ **FINAL ANSWER**

$\frac{34}{35}$

4WM1/01 NOVEMBER 2025

Question 24

3 marks | Completing the Square

24 Express $5x^2 - 20x + 23$ in the form $a(x - b)^2 + c$ where a, b and c are integers.

(Total for Question 24 is 3 marks)

WORKED SOLUTION

Question 24 · 4WM1/01 November 2025

1 **Calculate value**

$$5x^2 - 20x + 23 = 5(x^2 - 4x) + 23$$

$$= 5\left((x - 2)^2 - 4\right) + 23$$

$$= 5(x - 2)^2 + 3$$

FINAL ANSWER

$5(x - 2)^2 + 3$.

4WM1/01 NOVEMBER 2025

Question 25

3 marks | Algebraic Fractions

25 $a = \dfrac{2x+5}{1-x}$ $x = \dfrac{5-2y}{3y}$

Write a in the form $\dfrac{m+ny}{p(y-1)}$ where m, n and p are integers.

Show your working clearly.

$a =$ .....

(Total for Question 25 is 3 marks)

WORKED SOLUTION

Question 25 · 4WM1/01 November 2025

1 **Split the ratio**

$$a = \frac{2x+5}{1-x}, \quad x = \frac{5-2y}{3y}$$

2 **Split the ratio**

Substitute for x.

3 **Numerator**

Numerator:

$$2x+5 = 2\left(\frac{5-2y}{3y}\right)+5$$

$$= \frac{10-4y+15y}{3y} = \frac{10+11y}{3y}$$

4 **Denominator**

Denominator:

$$1-x = 1-\frac{5-2y}{3y}$$

$$= \frac{3y-5+2y}{3y} = \frac{5y-5}{3y} = \frac{5(y-1)}{3y}$$

5 **Split the ratio**

Therefore

$$a = \frac{\frac{10+11y}{3y}}{\frac{5(y-1)}{3y}} = \frac{10+11y}{5(y-1)}$$

✓ **FINAL ANSWER**

$$\frac{10+11y}{5(y-1)}$$

Question 26

5 marks | 3D Pythagoras & Trigonometry

26 The diagram shows prism $ABCDEFGH$

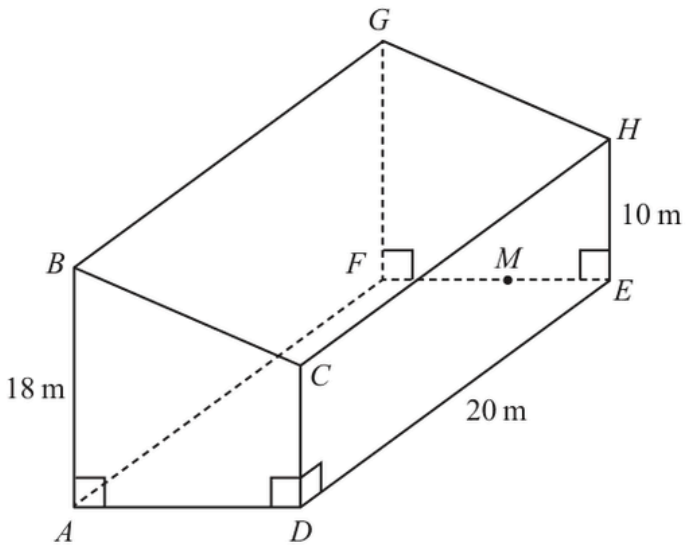


Diagram **NOT** accurately drawn

$$AB = FG = 18\,\text{m} \qquad DC = EH = 10\,\text{m} \qquad AD = FE$$
$$DE = CH = AF = BG = 20\,\text{m}$$
$$\text{angle } BAD = \text{angle } ADC = \text{angle } CDE = 90°$$

M is the point on FE such that $FM = \frac{3}{5}FE$

Given that angle $GMF = 60°$

calculate the angle of elevation of G from D
Give your answer correct to one decimal place.
Show your working clearly.

.....°

(Total for Question 26 is 5 marks)

1 **Use trigonometry**

From triangle GMF,

$$\tan 60^\circ = \frac{FG}{FM} = \frac{18}{FM}$$

$$FM = \frac{18}{\tan 60^\circ} = 6\sqrt{3}$$

2 **Simplify surd**

Since $FM = \frac{3}{5}FE$,

$$FE = 10\sqrt{3}$$

3 **Simplify surd**

The horizontal distance from D to the point below G is

$$\sqrt{20^2 + (10\sqrt{3})^2} = 10\sqrt{7}$$

4 **Use trigonometry**

If θ is the angle of elevation,

$$\tan\theta = \frac{18}{10\sqrt{7}}$$

$$\theta \approx 34.2289^\circ$$

✓ **FINAL ANSWER**

34.2°.

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Question 27

5 marks | Linear Graphs

27 $ABCD$ is a rhombus with $AB = BC = CD = DA$

A has coordinates $(16, -9)$

C has coordinates $(24, 15)$

Find an equation of the line BD
Give your answer in the form $ax + by + c = 0$ where a, b and c are integers.
Show your working clearly.

(Total for Question 27 is 5 marks)

WORKED SOLUTION

Question 27 · 4WM1/01 November 2025

1 Diagonals of a rhombus bisect

Diagonals of a rhombus bisect each other at right angles.

2 Find the midpoint

Midpoint of AC:

$$\left(\frac{16+24}{2}, \frac{-9+15}{2}\right) = (20, 3)$$

3 Find the gradient

Gradient of AC:

$$\frac{15-(-9)}{24-16} = 3$$

4 Find the gradient

So gradient of BD is $-\frac{1}{3}$.

$$y - 3 = -\frac{1}{3}(x - 20)$$

$$x + 3y - 29 = 0$$

FINAL ANSWER

$x + 3y - 29 = 0$.

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Question 28

4 marks | Algebraic Fractions

28 Solve $\dfrac{6x^3+5x^2+x}{4x^2-1} \div \dfrac{15x^2-x-2}{8x-4} = 2x$

Show clear algebraic working.

$x =$ .....

(Total for Question 28 is 4 marks)

WORKED SOLUTION

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1 Factor each expression

Factor each expression:

$$\frac{x(3x+1)(2x+1)}{(2x-1)(2x+1)} \div \frac{(5x-2)(3x+1)}{4(2x-1)} = 2x$$

$$\frac{x(3x+1)}{2x-1} \times \frac{4(2x-1)}{(5x-2)(3x+1)} = 2x$$

$$\frac{4x}{5x-2} = 2x$$

$$4x = 2x(5x-2)$$

$$10x^2 - 8x = 0$$

$$2x(5x-4) = 0$$

2 The original fractions do not

The original fractions do not allow $x = 0$, so

$$x = \frac{4}{5}$$

FINAL ANSWER

$x = \frac{4}{5}$.