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4MA1 June 2027 Paper 1H Best Guess Paper

Higher · Target 4/5 · Question Paper

Disclaimer

This independently compiled practice paper is for students preparing for Pearson Edexcel International GCSE Mathematics A (4MA1), Higher Tier, Paper 1H. A calculator may be used.

This is not an official Pearson Edexcel examination paper and is not endorsed by Pearson. Best Guess questions are independent practice, not a guarantee of what will appear in the exam.

Revise the full specification. Attempt the matching question paper before using the mark scheme, model answers and practice resources at www.mygrade9mathstutor.com.

If you find this paper helpful, please support me by buying me a coffee

Video walkthrough

Calculator allowed · 27 questions · 100 marks · Suggested time: 2 hours.

International GCSE Mathematics

Formulae sheet – Higher Tier

Arithmetic series

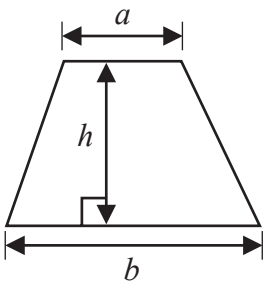
Sum to n terms, $S_n = \frac{n}{2}[2a + (n-1)d]$

The quadratic equation

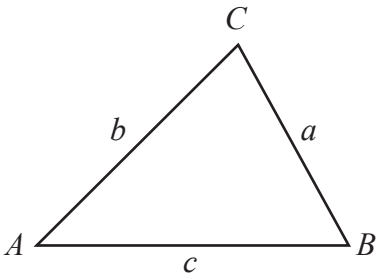
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

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

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



Trigonometry



In any triangle *ABC*

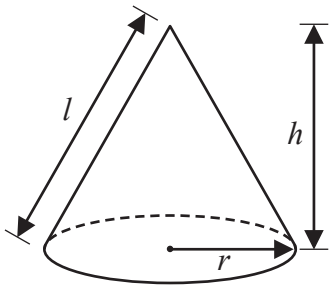
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

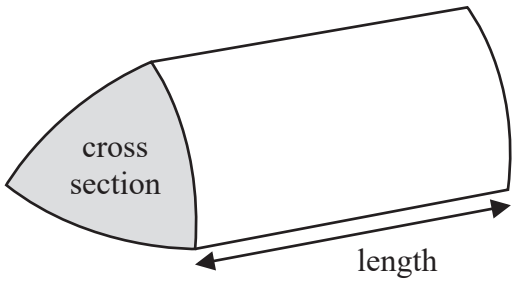
Area of triangle $= \frac{1}{2}ab\sin C$

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

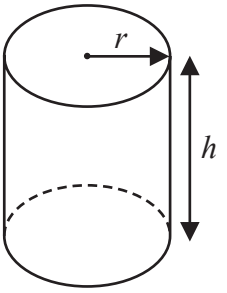
Curved surface area of cone $= \pi rl$



Volume of prism
= area of cross section × length

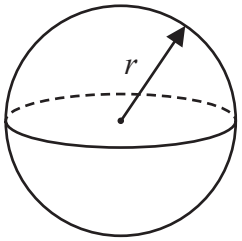


Volume of cylinder $= \pi r^2 h$
Curved surface area of cylinder $= 2\pi rh$



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

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



Answer ALL TWENTY-SEVEN questions.
Write your answers in the spaces provided.
You must show all stages of your working.

1 Write 124 as a product of its prime factors.

(Total for Question 1 is 2 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 2 Review: ____ / ____

2 Show that $3\frac{1}{5} \times 2\frac{5}{8} = 8\frac{2}{5}$

(Total for Question 2 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

3 The length of a table is measured as 1.6 metres correct to one decimal place.

(a) Write down the upper bound of the length of the table. (1)

(b) Write down the lower bound of the length of the table. (1)

(Total for Question 3 is 2 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 2 Review: ____ / ____

4 (a) Expand and simplify $3(2x - 5) - 2(x + 4)$.

.....

(2)

(b) Factorise fully $18a^2b - 12ab^2$.

.....

(2)

(c) Solve the inequality $5y - 3 > 2y + 12$.

.....

(2)

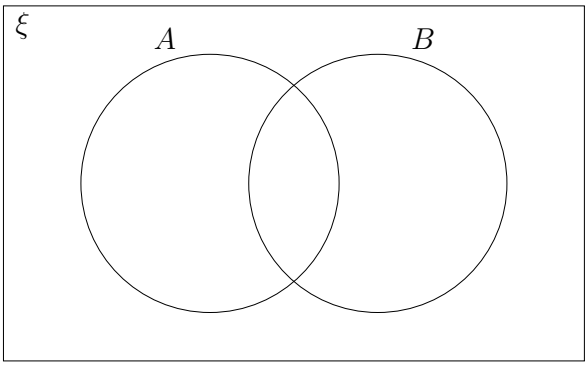
(Total for Question 4 is 6 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 6 Review: ____ / ____

5

The universal set $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$.
$A = \{\text{prime numbers in } \xi\}$; $B = \{\text{multiples of 3 in } \xi\}$.

(a) Complete the Venn diagram to represent this information.



(3)

(b) A number is chosen at random from ξ.
Find the probability that it is in $A \cup B$.

. . . . . .

(1)

(Total for Question 5 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

6 Here are the first five terms of an arithmetic sequence:

7 11 15 19 23

(a) Find an expression, in terms of n, for the n-th term of this sequence.

.....

(2)

(b) Show that 87 is a term in this sequence.

(2)

(Total for Question 6 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

7 The table shows information about the heights, h cm, of 40 plants.

Height (h cm)	**Frequency**
$10 < h \leq 20$	8
$20 < h \leq 30$	14
$30 < h \leq 40$	12
$40 < h \leq 50$	6

(a) Write down the modal class interval. (1)

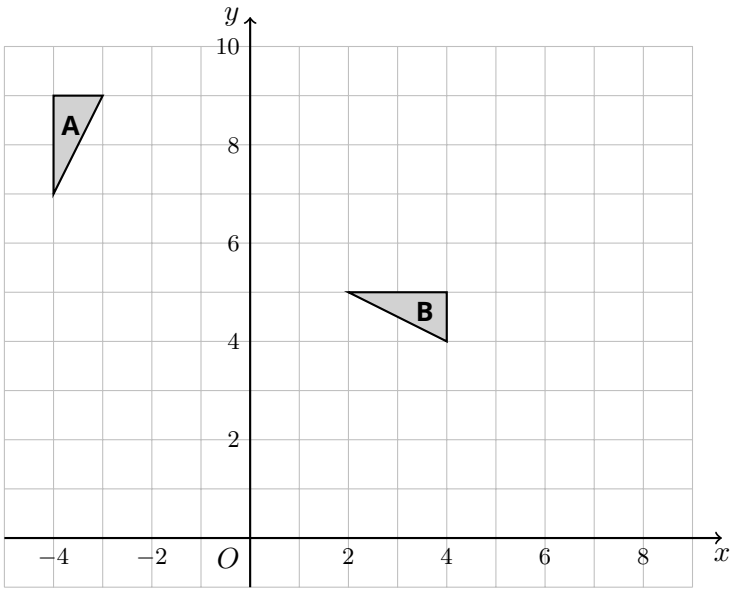
(b) Calculate an estimate for the mean height of the plants. (3)

..... cm

(Total for Question 7 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

8



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

(2 marks)

(b) On the grid, translate triangle **A** by the vector $\begin{pmatrix} 2 \\ -5 \end{pmatrix}$.
Label the new triangle **C**.

(1 mark)

(Total for Question 8 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

9 Change a speed of 90 kilometres per hour to a speed in metres per second.
Show your working clearly.

(Total for Question 9 is 2 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 2 Review: ____ / ____

10 **Zoe** wants to make a total of 180 bags of beads to sell at a fair.
She will make small bags and large bags where
number of small bags : number of large bags = 7 : 5

Each small bag will contain 65 grams of beads.
Each large bag will contain 145 grams of beads.

Zoe thinks she will need less than 17 kilograms of beads to fill 180 bags.

Is Zoe correct?
You must show how you get your answer.

(Total for Question 10 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

11 A solid cylinder has a radius of 5.4 cm.
The volume of the cylinder is $1100\,\text{cm}^3$.

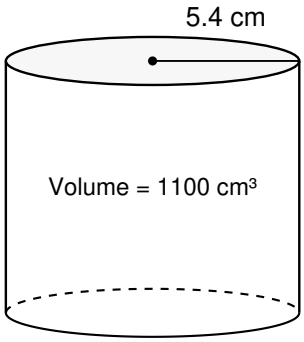


Diagram NOT accurately drawn

Calculate the total surface area of the cylinder.
Give your answer correct to 3 significant figures.

.....cm^2

(Total for Question 11 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

12 Sophie is building a curved garden path. The path, shown shaded in the diagram, is the region between two semicircles.

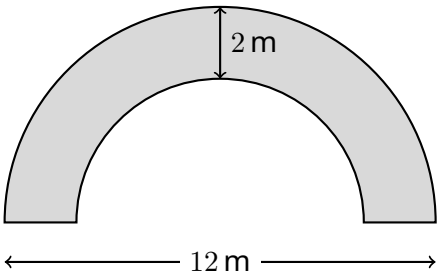


Diagram **NOT** accurately drawn

The diameter of the outer semicircle is 12 m.
The path has a constant width of 2 m.

Calculate the area of the path.
Give your answer as a multiple of π.

.....m^2

(Total for Question 12 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

13 Find the equation of the line that passes through (2, 5) and (6, 17).
Give your answer in the form $y = mx + c$.

(Total for Question 13 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

14 A car decreases in value by 12% each year. The car is currently worth £15,400.
Work out the value of the car 3 years ago. Give your answer to the nearest pound.

(Total for Question 14 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

15 Solve the simultaneous equations.
Show clear algebraic working.

$$3x + 2y = 14$$

$$5x - 3y = 17$$

(Total for Question 15 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

16 There are 7 red counters and 5 blue counters in a bag.
Emma takes a counter at random, keeps it, and then takes a second counter.
Work out the probability that Emma takes counters of different colours.

(Total for Question 16 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

17 A, B, C and D lie on the circumference of a circle with centre O.
Angle AOC = 130°. B and D lie on opposite arcs AC.

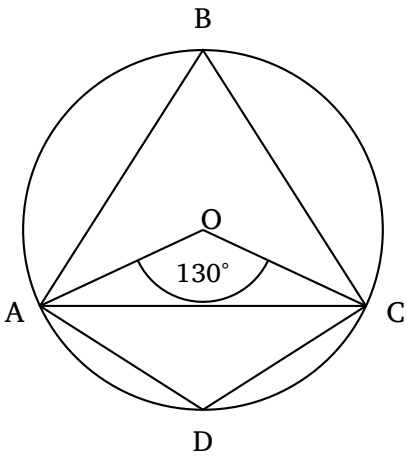


Diagram not to scale

(a) Work out angle ABC. Give a reason for your answer.

.....

(2)

(b) Work out angle ADC. Give a reason for your answer.

.....

(2)

(Total for Question 17 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

18 The nth term of a sequence is $u_n = n^2 - 3n + 5$.

(a) Find the first three terms of the sequence.

.....

(2)

(b) Is 113 a term of this sequence? Show algebraic working to justify your answer.

.....

(3)

(Total for Question 18 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

19 y is directly proportional to the cube of x.
When $x = 2$, $y = 40$.
Find x when $y = 1080$.

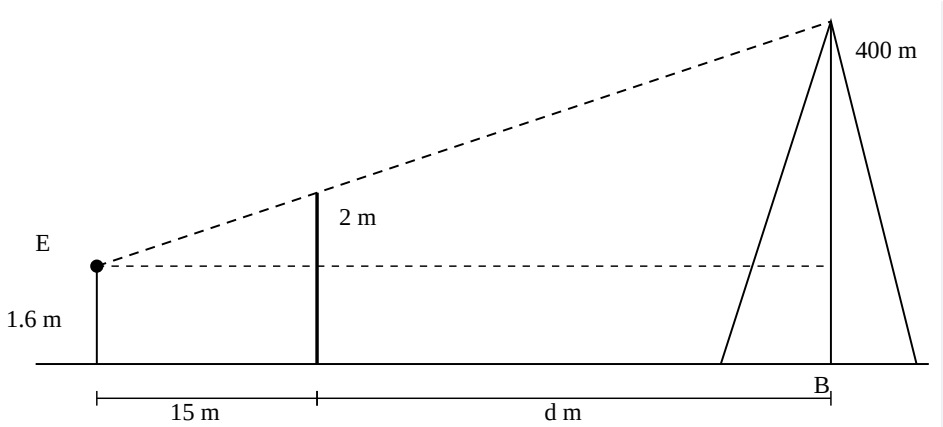
(Total for Question 19 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

20

Katie's eye level is at 1.6 m above the ground. She is looking at a mountain that she knows is 400 m tall. There is a 2 m tall pine tree between her and the mountain.

When she is standing 15 m away from the base of the tree, the top of the mountain is just hidden by the top of the pine tree. All measurements have been taken from level ground.



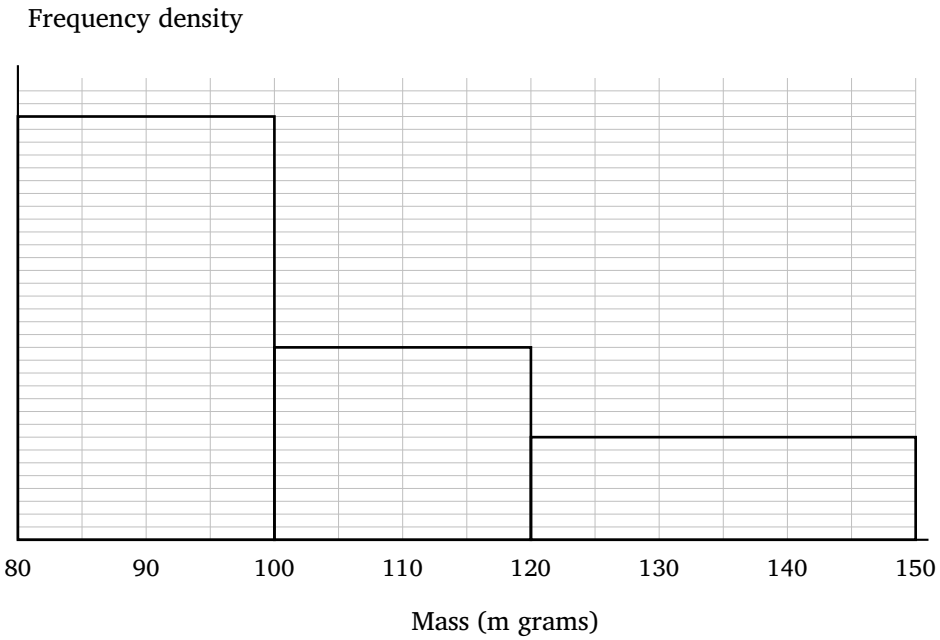
Not to scale. B is directly below the mountain top.

Calculate how far the mountain is from the other side of the tree.

(Total for Question 20 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

21 The histogram shows the masses of 120 apples. The vertical scale is not labelled.
The bar for $100 < m \leq 120$ represents 30 apples.
Work out the number of apples with a mass greater than 120 grams.



(Total for Question 21 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

22 The diagram shows triangle PQR with PQ = 18 cm, PR = 24 cm, and angle QPR = 52°.

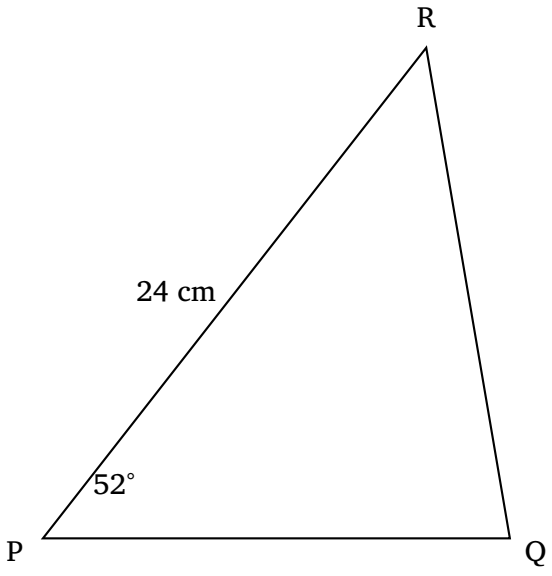


Diagram not to scale

(a) Calculate the length of QR. Give your answer correct to 3 significant figures.

.....

(3)

(b) Calculate the area of triangle PQR. Give your answer correct to 3 significant figures.

.....

(2)

(Total for Question 22 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip (a) Clip (b)	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

23 Express as a single fraction in its simplest form.

$$\frac{3}{x+2} - \frac{1}{x-5}$$

(Total for Question 23 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

24 Simplify fully.

$$\frac{2x^2 + 5x - 12}{2x^2 + 7x - 4}$$

(Total for Question 24 is 3 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 3 Review: ____ / ____

25 OABC is a parallelogram. Vector OA = **a** and vector OC = **c**.
X lies on AC such that AX : XC = 1 : 3.
Find vector OX in terms of **a** and **c**. Give your answer in its simplest form.

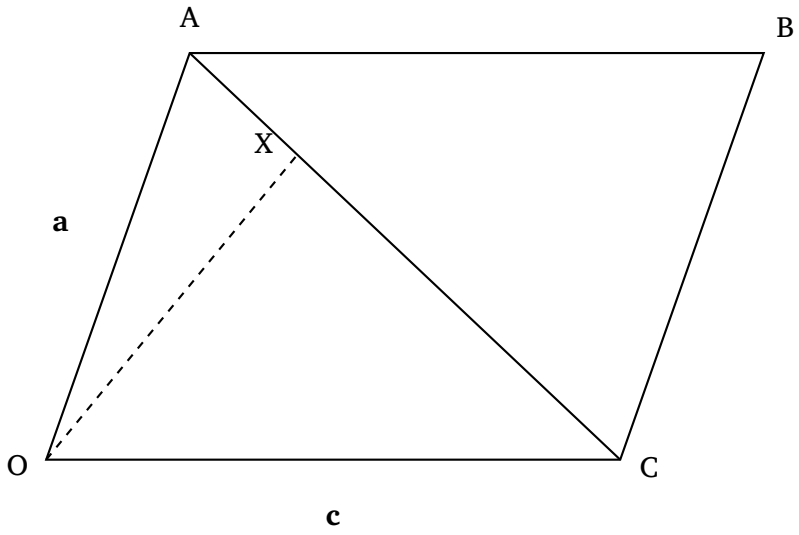


Diagram not to scale

(Total for Question 25 is 4 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 4 Review: ____ / ____

26 The functions f and g are defined by

$$f(x) = \frac{2x + 1}{x - 3} \quad (x \neq 3), \; g(x) = x^2 - 4.$$

(a) Find f(4).

.....

(1)

(b) Solve the equation $fg(x) = \frac{11}{2}$.

.....

(4)

(c) Find the inverse function $f^{-1}(x)$.

.....

(2)

(Total for Question 26 is 7 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 7 Review: ____ / ____

27

ABCD is a rectangle. PQRS is a square with P on AB, R on BC and S on CD. Q lies outside the rectangle. T is where QR crosses AB. AB = 8 cm, BC = 4 cm and PQ = 5 cm. The shaded region is inside both shapes. Calculate its exact area. Show all your working.

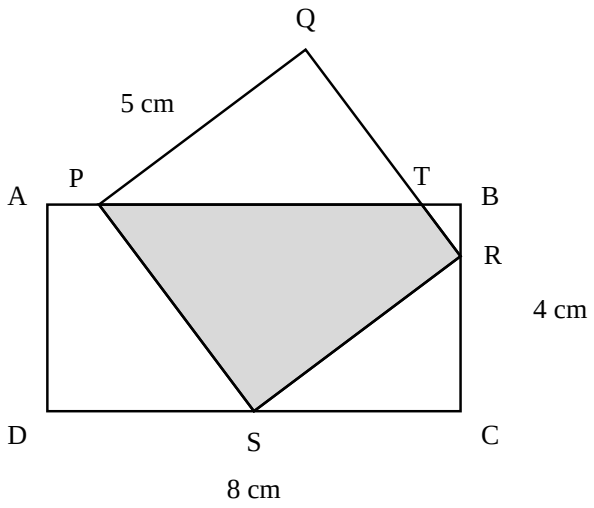


Diagram not to scale. T is where QR crosses AB.

(Total for Question 27 is 5 marks)

Model Solution	Practice Perfect Questions	Progress & Mastery
Clip	Worksheet	☐ Nailed It ☐ Watched Clip ☐ Mastered It ☐ Come Back To It Marks: ____ / 5 Review: ____ / ____

END OF PAPER

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4MA1 June 2027 Paper 1H — Success Tracker

Name: _____

International GCSE Mathematics A • Higher Tier (Target Grade 4/5 Crossover Focus) **Date Started:** _____

How to build exam confidence (no totals or percentages needed): Tick **Nailed It** when you solve a question right first time. If you get stuck, scan the QR code and tick **Watched Clip**. Once you complete the Practice Perfect set and re-solve the question cold, tick **Mastered It**—every tick here is a topic you turned from a gap into a strength.

Q#	Topic Focus	Nailed It	Watched Clip	Mastered It	Come Back	Marks
1	Product of Prime Factors	☐	☐	☐	☐	/ 2
2	Multiplying Mixed Numbers (Show That)	☐	☐	☐	☐	/ 3
3	Upper & Lower Bounds of Measurement	☐	☐	☐	☐	/ 2
4	Expanding, Factorising & Linear Inequalities	☐	☐	☐	☐	/ 6
5	Venn Diagrams, Set Notation & Probability	☐	☐	☐	☐	/ 4
6	Linear Sequences (*n*th Term & Term Check)	☐	☐	☐	☐	/ 4
7	Modal Class & Estimated Mean from Grouped Data	☐	☐	☐	☐	/ 4
8	Transformations (Reflection & Vector Translation)	☐	☐	☐	☐	/ 3
9	Compound Speed Conversion (km/h to m/s)	☐	☐	☐	☐	/ 2
10	Sharing in a Ratio & Mass Unit Conversions	☐	☐	☐	☐	/ 4
11	Cylinder Volume & Total Surface Area	☐	☐	☐	☐	/ 4
12	Area of a Semicircular Garden Path (in Terms of π)	☐	☐	☐	☐	/ 3
13	Equation of a Straight Line Through Two Points	☐	☐	☐	☐	/ 3
14	Reverse Compound Depreciation	☐	☐	☐	☐	/ 3
15	Linear Simultaneous Equations	☐	☐	☐	☐	/ 3
16	Probability Without Replacement (Different Colours)	☐	☐	☐	☐	/ 3
17	Circle Theorems with Geometrical Reasons	☐	☐	☐	☐	/ 4
18	Quadratic Sequences (Generating & Testing Terms)	☐	☐	☐	☐	/ 5
19	Direct Proportion to the Cube of x	☐	☐	☐	☐	/ 3
20	Similar Triangles in Practical Context	☐	☐	☐	☐	/ 4
21	Histograms (Unlabelled Frequency Density Scale)	☐	☐	☐	☐	/ 4
22	Cosine Rule & Area of a Non-Right Triangle	☐	☐	☐	☐	/ 5
23	Subtracting Algebraic Fractions	☐	☐	☐	☐	/ 3
24	Simplifying Algebraic Fractions (Quadratics)	☐	☐	☐	☐	/ 3
25	Vector Geometry in a Parallelogram	☐	☐	☐	☐	/ 4
26	Composite & Inverse Functions	☐	☐	☐	☐	/ 7
27	Overlapping Rectangle & Square Exact Area	☐	☐	☐	☐	/ 5

HABIT & SUCCESS MILESTONES (TICK AS YOU COMPLETE THEM)

☐ Attempted every question (Q1–Q27) ☐ Watched clips for tough topics ☐ Cleared all "Come Back" boxes

Biggest win on this paper (a topic I couldn't do before, but can do now): _____