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4MA1 June 2027 Paper 1H Best Guess Paper

Higher · Standard · 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 · 25 questions · 100 marks · Suggested time: 2 hours.

International GCSE Mathematics

Formulae sheet – Higher Tier

Arithmetic series

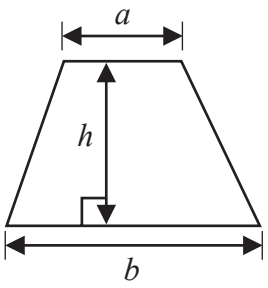
Sum to n terms, $S_n = \frac{n}{2}[2a + (n-1)d]$

The quadratic equation

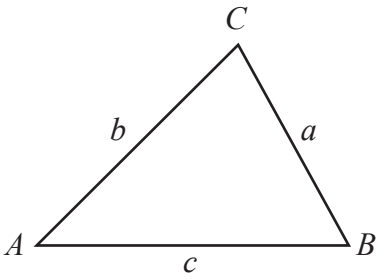
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

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

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



Trigonometry



In any triangle *ABC*

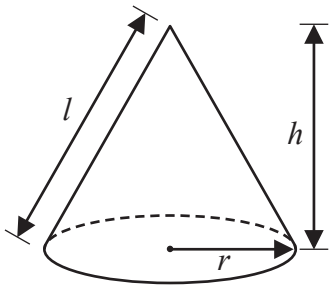
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

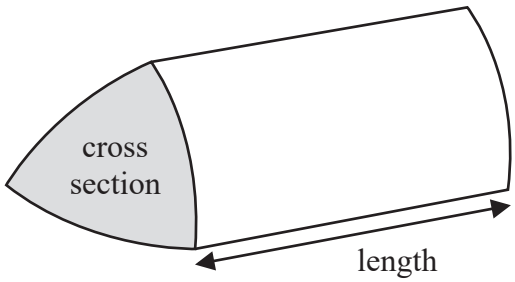
Area of triangle $= \frac{1}{2}ab\sin C$

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

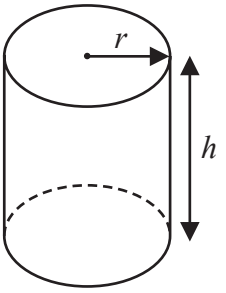
Curved surface area of cone $= \pi rl$



Volume of prism
= area of cross section × length

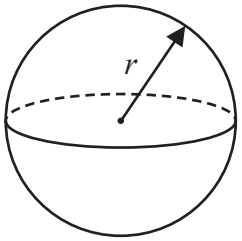


Volume of cylinder $= \pi r^2 h$
Curved surface area of cylinder $= 2\pi rh$



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

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



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

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

(Total for Question 1 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: ____ / ____

2 Write 124 as a product of its prime factors.

(Total for Question 2 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: ____ / ____

3 (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 3 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: ____ / ____

4 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

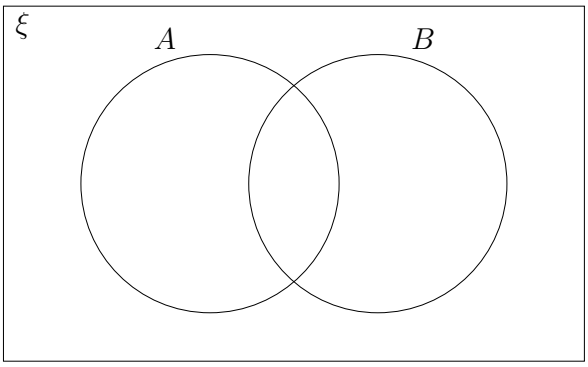
(Total for Question 4 is 4 marks)

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

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 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 6 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: ____ / ____

7 A solid cylinder has a radius of 5.4 cm and a height of 12 cm.
Work out the total surface area of the cylinder. Give your answer correct to 3 significant figures.

(Total for Question 7 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: ____ / ____

8 **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 8 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: ____ / ____

9 Solve the simultaneous equations.
Show clear algebraic working.

$$3x + 2y = 14$$

$$5x - 3y = 17$$

(Total for Question 9 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: ____ / ____

10 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 10 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: ____ / ____

11 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 11 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: ____ / ____

12 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.

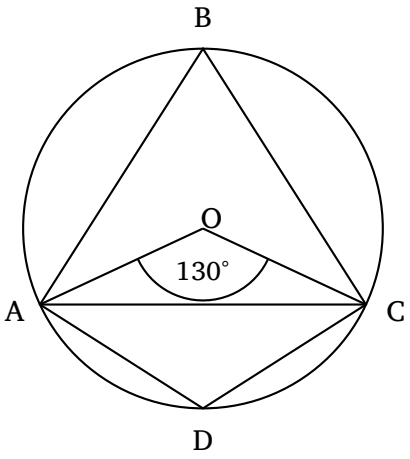


Diagram not to scale

(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 12 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: ____ / ____

13 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)

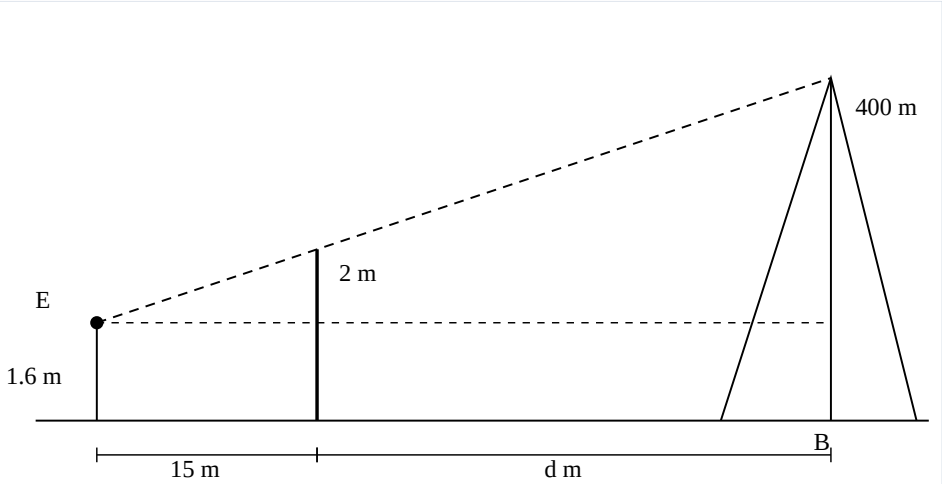
(Total for Question 13 is 5 marks)

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

14

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 14 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: ____ / ____

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

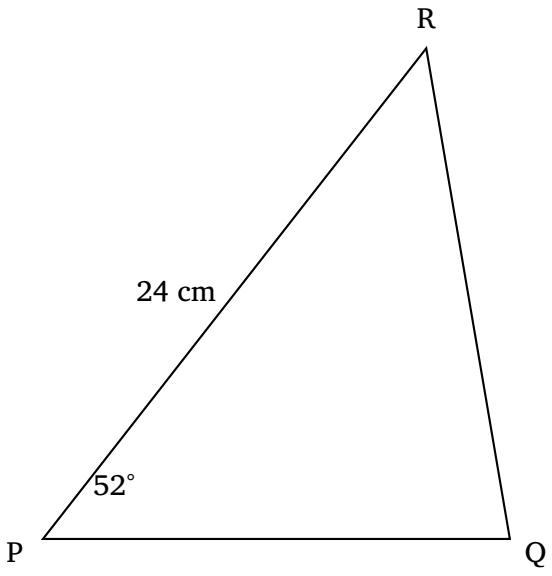


Diagram not to scale

(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 15 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: ____ / ____

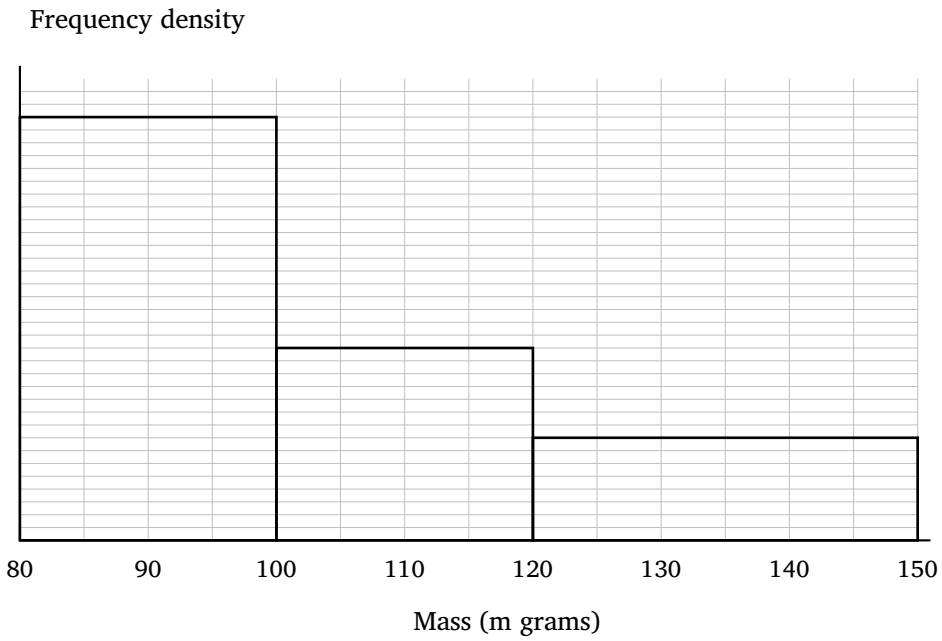
16 Simplify fully.

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

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

(Total for Question 18 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: ____ / ____

19 Express as a single fraction in its simplest form.

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

(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 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 20 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: ____ / ____

21 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.

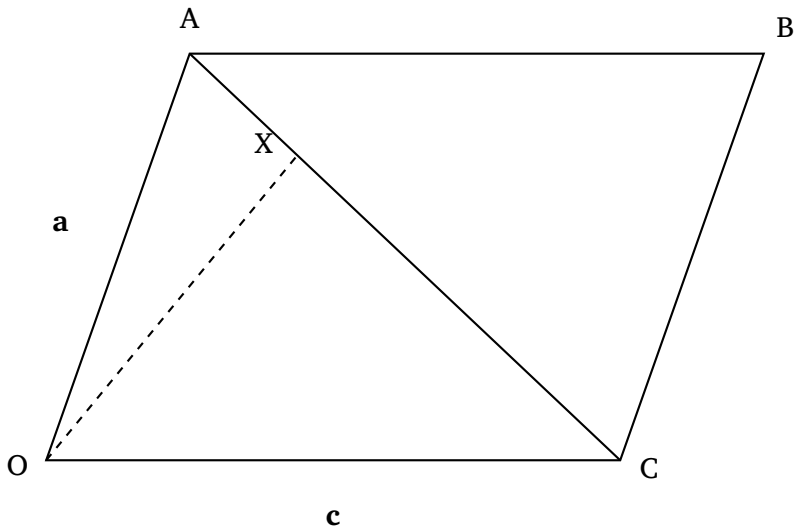


Diagram not to scale

(Total for Question 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

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.

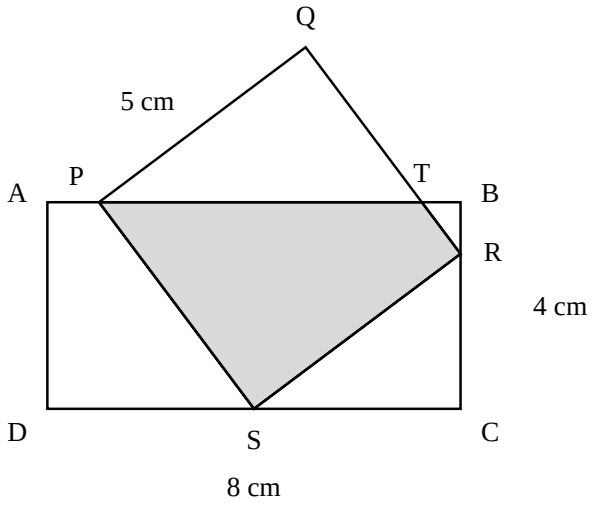


Diagram not to scale. T is where QR crosses AB.

(Total for Question 22 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: ____ / ____

23 The circle has centre $(3, 2)$ and radius 5.
The point A has coordinates $(7, 5)$.

Find the equation of the tangent to the circle at A.
Give your answer in the form $ax + by = c$, where a, b, and c are integers.

(Total for Question 23 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: ____ / ____

24 Find the values of n such that

$$\left(\frac{10^{2n} \times 2^{2(n^2-4n)} \times 5^{2(2-n)}}{50^2}\right)^{\frac{2}{3}} = 16$$

Show clear algebraic working.

(Total for Question 24 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: ____ / ____

25 A solid cone has base radius r cm, perpendicular height h cm and slant height l cm.
Its total surface area is 24π cm^2. Given that $l = 3r$, find the exact value of h.
Give your answer in the form $a\sqrt{b}$, where a and b are integers.

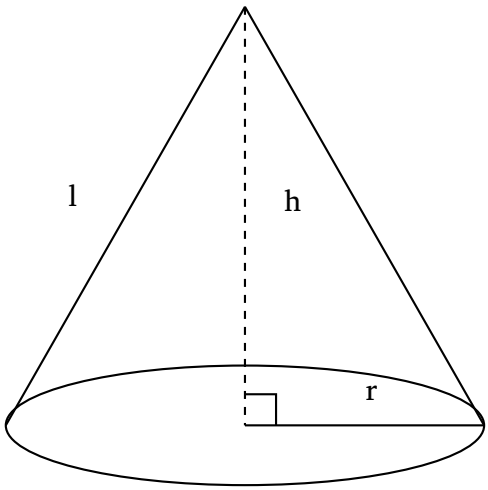


Diagram not to scale

(Total for Question 25 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: ____ / ____

END OF PAPER

MYGRADE9MATHS TUTOR • PROGRESS & MASTERY RECORD

4MA1 June 2027 Paper 1H — Success Tracker

International GCSE Mathematics A • Standard Higher Practice Paper

Name: _____

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	Multiplying Mixed Numbers (Show That)	☐	☐	☐	☐	/ 3
2	Product of Prime Factors	☐	☐	☐	☐	/ 2
3	Expanding, Factorising & Linear Inequalities	☐	☐	☐	☐	/ 6
4	Modal Class & Estimated Mean from Grouped Data	☐	☐	☐	☐	/ 4
5	Venn Diagrams, Set Notation & Probability	☐	☐	☐	☐	/ 4
6	Reverse Compound Depreciation	☐	☐	☐	☐	/ 3
7	Total Surface Area of a Solid Cylinder	☐	☐	☐	☐	/ 3
8	Sharing in a Ratio & Mass Unit Conversions	☐	☐	☐	☐	/ 4
9	Linear Simultaneous Equations	☐	☐	☐	☐	/ 3
10	Equation of a Straight Line Through Two Points	☐	☐	☐	☐	/ 3
11	Probability Without Replacement (Different Colours)	☐	☐	☐	☐	/ 3
12	Circle Theorems with Geometrical Reasons	☐	☐	☐	☐	/ 4
13	Quadratic Sequences (Generating & Testing Terms)	☐	☐	☐	☐	/ 5
14	Similar Triangles in Practical Context	☐	☐	☐	☐	/ 4
15	Cosine Rule & Area of a Non-Right Triangle	☐	☐	☐	☐	/ 5
16	Simplifying Algebraic Fractions (Quadratics)	☐	☐	☐	☐	/ 3
17	Histograms (Unlabelled Frequency Density Scale)	☐	☐	☐	☐	/ 4
18	Direct Proportion to the Cube of x	☐	☐	☐	☐	/ 3
19	Subtracting Algebraic Fractions	☐	☐	☐	☐	/ 3
20	Composite & Inverse Functions	☐	☐	☐	☐	/ 7
21	Vector Geometry in a Parallelogram	☐	☐	☐	☐	/ 4
22	Overlapping Rectangle & Square Exact Area	☐	☐	☐	☐	/ 5
23	Equation of a Tangent to a Shifted Circle	☐	☐	☐	☐	/ 4
24	Complex Exponential Equations & Fractional Powers	☐	☐	☐	☐	/ 5
25	Cone Surface Area & Exact Surd Height	☐	☐	☐	☐	/ 6

HABIT & SUCCESS MILESTONES (TICK AS YOU COMPLETE THEM)

☐ Attempted every question (Q1–Q25) ☐ 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): _____