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4MA1 Nov 2026 Paper 1 Best Guess Paper

———————————- Disclaimer ———————————-

This practice paper has been designed using a careful analysis of historical exam trends to identify topics highly likely to appear in the 1H paper. It is an excellent revision tool specifically structured for students targeting a Grade 5. To support this, the paper focuses heavily on essential crossover topics, while still retaining the more challenging questions at the end to provide a true Higher Tier mock exam experience.

Despite claims frequently seen on social media, it is strictly impossible to perfectly "predict" an exam paper—such statements are typically sales tactics. While the topics covered here are highly relevant, there is no guarantee they will appear in the actual exam. The most effective preparation strategy will always be a comprehensive revision of the entire mathematics specification.

You can find a link to this paper and more completely free resources at www.mygrade9mathstutor.com

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

The Playlist for Solutions can be found

The best way to work with this paper is work though it all, watch the Clip. If you get the question incorrect watch the clip again and then try the similar questions from the worksheets

International GCSE Mathematics

Formulae sheet – Higher Tier

Arithmetic series

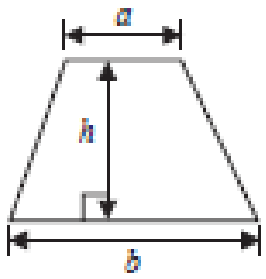
Sum to n terms, $S_n = \frac{n}{2}[2a + (n-1)d]$

The quadratic equation

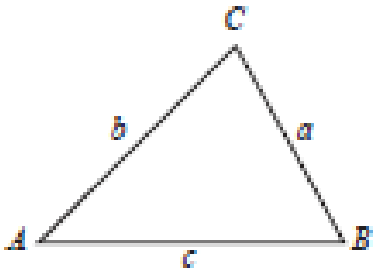
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

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

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



Trigonometry



In any triangle ABC

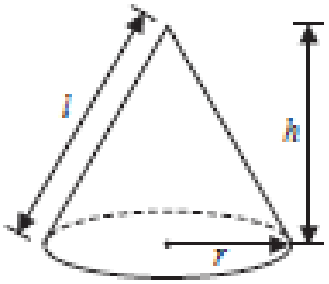
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

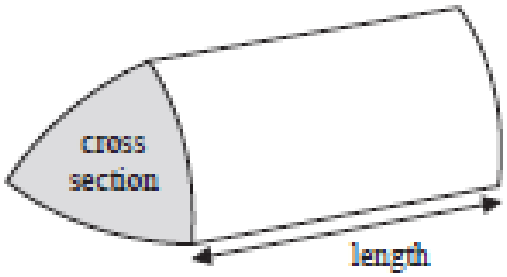
Area of triangle $= \frac{1}{2}ab\sin C$

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

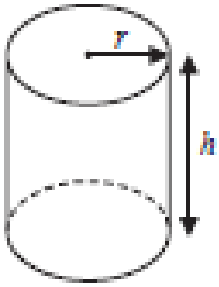
Curved surface area of cone $= \pi r l$



Volume of prism
= area of cross section × length

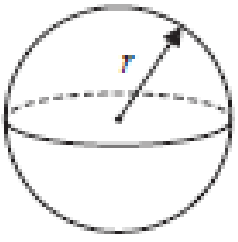


Volume of cylinder $= \pi r^2 h$
Curved surface area of cylinder $= 2\pi r h$



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

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



Answer ALL TWENTY EIGHT questions.
Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Show that $3\frac{1}{5} - 1\frac{2}{3} = 1\frac{8}{15}$

(Total for Question 1 is 2 marks)

Model Solution	Practice Perfect Questions

2 Express 5040 as a product of powers of its prime factors.
Show your working clearly.

(Total for Question 2 is 2 marks)

Model Solution	Practice Perfect Questions

3. Find an expression, in terms of n, for the nth term of the sequence 7, 11, 15, 19, 23

(Total for Question 3 is 2 marks)

Model Solution	Practice Perfect Questions

4. Work out $\frac{3.6 \times 10^{22}}{4.5 \times 10^{-6}}$

Give your answer in standard form.

.....

(Total for Question 4 is 2 marks)

Model Solution	Practice Perfect Questions

5 a) Expand and simplify $(x - 4)(x + 7)$.

.....

(2)

Model Solution	Practice Perfect Questions

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

.....

(2)

Model Solution	Practice Perfect Questions

(c) Solve

$$\frac{7x - 2}{4} = 3x + 1$$

Show clear algebraic working.

(3)

Model Solution	Practice Perfect Questions

(Total for Question 4 is 7 marks)

6. Solve the simultaneous equations:

$$3x + 2y = 16$$
$$4x - 3y = 27$$

Show clear algebraic working

(Total for Question 6 is 3 marks)

Model Solution	Practice Perfect Questions

7 (a) Simplify $a^6 \times a^{10}$

.....

(1)

(b) Simplify $c^{30} \div c^{12}$

.....

(1)

Model Solution	Practice Perfect Questions

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

.....

(2)

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

.....

(1)

(Total for Question 7 is 5 marks)

Model Solution	Practice Perfect Questions

8 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.

..... metres (1)

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

..... metres (1)

(Total for Question 8 is 2 marks)

Model Solution	Practice Perfect Questions

9 The table gives information about the masses, m kg, of 50 luggage bags:

Mass (m kg)	Frequency
$0 < m \leq 5$	6
$5 < m \leq 10$	14
$10 < m \leq 15$	18
$15 < m \leq 20$	8
$20 < m \leq 25$	4

Calculate an estimate for the mean mass of the 50 luggage bags.

(Total for Question 9 is 3 marks)

Model Solution	Practice Perfect Questions

10 Carlos changes £600 into Euros (€).
The exchange rate is £1 = €1.15.
Carlos divides his Euros into money to spend and money to save in the ratio 3: 2.
He changes the money to save back into Pounds (£).
The new exchange rate is £1 = €1.18.
Work out how many Pounds (£) Carlos receives.
Give your answer to the nearest penny.

(Total for Question 10 is 5 marks)

Model Solution	Practice Perfect Questions

11. Point B is on a bearing of 075° from point A. Work out the bearing of A from B.

(Total for Question 11 is 2 marks)

Model Solution	Practice Perfect Questions

12 A solid cylinder has a radius of 4.5 cm and a height of 10 cm. Calculate the volume of the cylinder. Give your answer correct to 3 significant figures.

(Total for Question 12 is 3 marks)

Model Solution	Practice Perfect Questions

13 Find the equation of the line passing through A(1, 4) and B(3, 10). Give your answer in the form $y = mx + c$

(Total for Question 13 is 3 marks)

Model Solution	Practice Perfect Questions

14 A train travels 135 km in 1 hour and 30 minutes. Work out the average speed of the train in m/s.

(Total for Question 14 is 3 marks)

Model Solution	Practice Perfect Questions

15 A regular n-sided polygon has an interior angle of $(10x + 18)°$ and an exterior angle of $(2x - 18)°$.
Work out the value of n.

(3)

(Total for Question 15 is 3 marks)

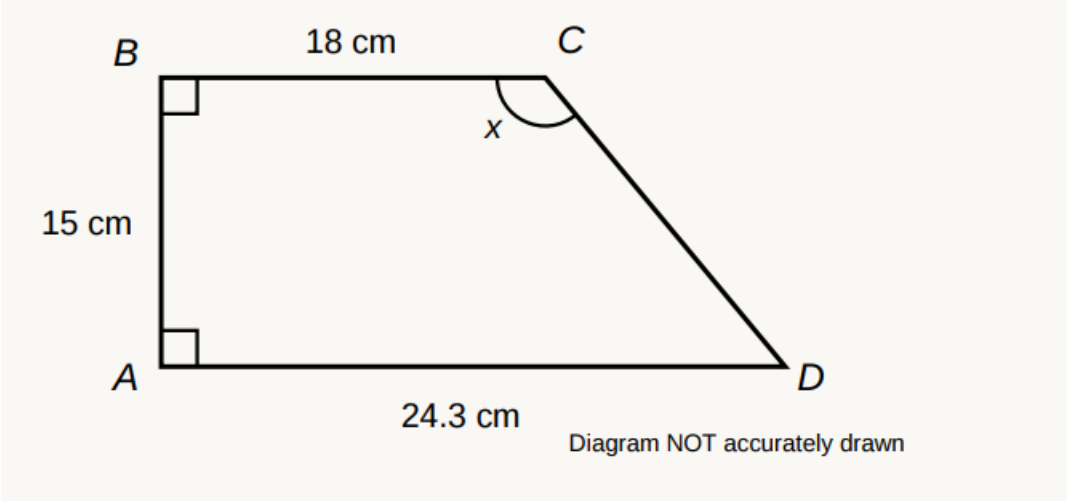
Model Solution	Practice Perfect Questions

16 There are 5 red counters and 4 blue counters in a bag.
A counter is taken at random, its colour noted, and it is replaced.
A second counter is then taken.
Work out the probability that both counters are the same colour

(Total for Question 16 is 3 marks)

Model Solution	Practice Perfect Questions

17 *ABCD* is a trapezium.



Work out the size of angle x.
Give your answer correct to 1 decimal place.

(Total for Question 17 is 3marks)

Model Solution	Practice Perfect Questions

18 Elena bought a commercial printing machine for £85,000.
In the first year, the value of the machine depreciated by 12%.
In the second year, the value of the machine depreciated by 15%.
In the third year, the value of the machine increased by x%.
At the end of the third year, the value of Elena's machine was £66,759.
Work out the value of x.

(Total for Question 18 is 4 marks)

Model Solution	Practice Perfect Questions

19 y is directly proportional to the square of t.
$y = 20$ when $t = 2$
t is inversely proportional to the square root of x.
$t = 3$ when $x = 4$
Find a formula for y in terms of x.
Give your answer in its simplest form.

(Total for Question 19 is 4 marks)

Model Solution	Practice Perfect Questions

20 The grouped frequency table shows information about the weekly wages of 80 workers.

Weekly wage (£x)	Cumulative Frequency
$100 < x \leq 200$	8
$200 < x \leq 300$	15
$300 < x \leq 400$	37
$400 < x \leq 500$	10
$500 < x \leq 600$	7
$600 < x \leq 700$	3

(a) Complete the cumulative frequency table.

Weekly wage (£x)	Cumulative Frequency
$100 < x \leq 200$	
$100 < x \leq 300$	
$100 < x \leq 400$	
$100 < x \leq 500$	
$100 < x \leq 600$	
$100 < x \leq 700$	

(1)

(b) On the grid opposite, draw a cumulative frequency graph for your table.

(2)

(c) Use your graph to find an estimate for the median wage.

.....

(1)

(d) Use your graph to find an estimate for the interquartile range.

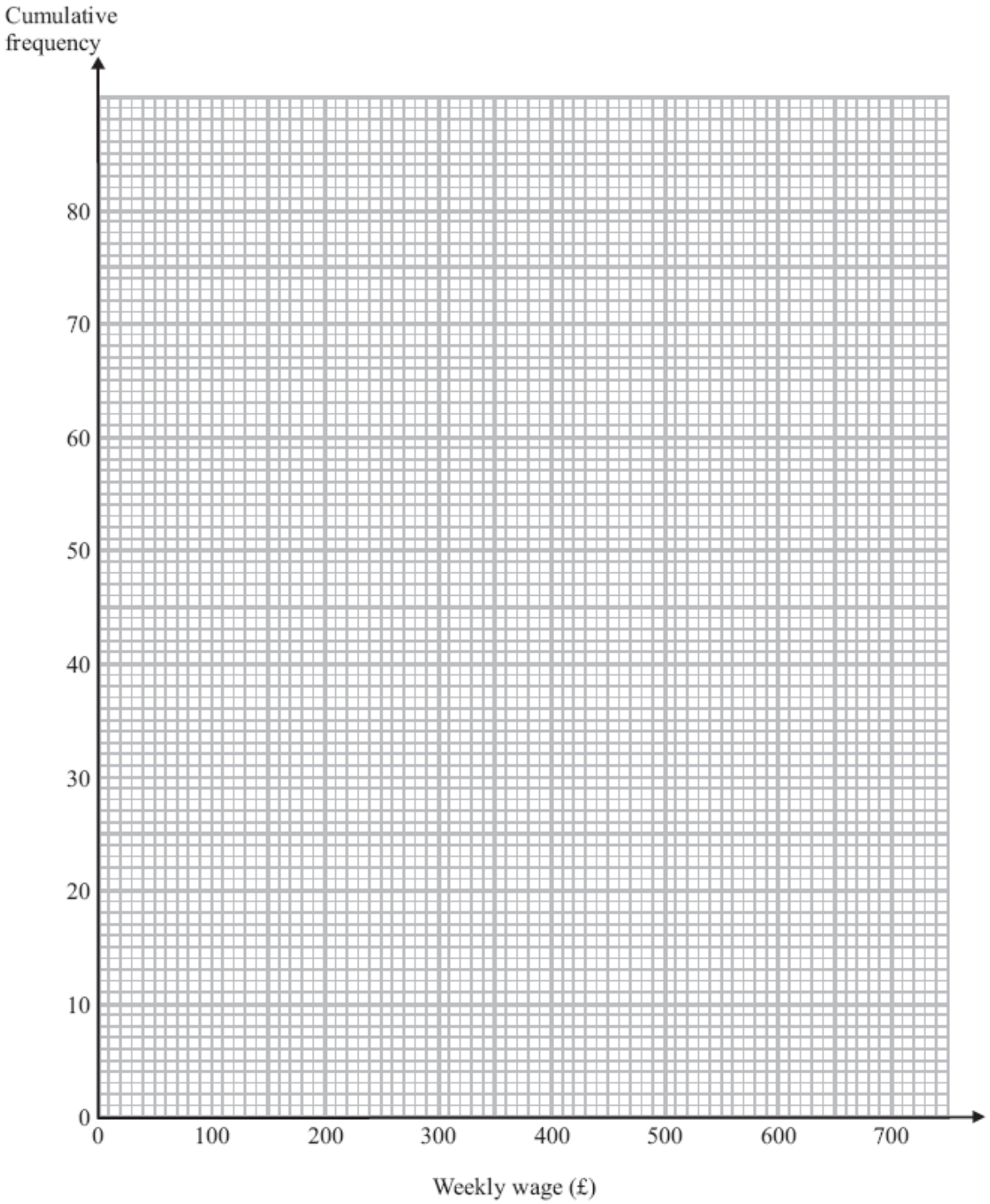
£ .....

(2)

(e) Use your graph to find an estimate for the number of workers with a weekly wage of more than £430

.....

(2)



(Total for Question 20 is 8 marks)

Model Solution	Practice Perfect Questions

21 Use algebra to show that $0.3\dot{8}\dot{1} = \frac{21}{55}$

(Total for Question 21 is 3 marks)

Model Solution	Practice Perfect Questions

22 Make y the subject of the formula:

$$p = \sqrt{\frac{2y + 5}{3y - k}}$$

(Total for Question 22 is 3 marks)

Model Solution	Practice Perfect Questions

23 Solve the quadratic inequality: $3x^2 - 5 \leq 14x$
Show clear algebraic working.

(Total for Question 23 is 3 marks)

Model Solution	Practice Perfect Questions

24 The straight-line L has equation $2x + y = 7$.
The curve C has equation $x^2 + y^2 - 4x + 2y = 32$.
Find the coordinates of the points where L and C intersect.
Show clear algebraic working.

.....

(Total for Question 24 is 5 marks)

Model Solution	Practice Perfect Questions

25 The diagram shows a right pyramid V ABCD with a horizontal square base ABCD of side length 10 cm.
The vertical height V H of the pyramid is 15 cm, where H is the centre of the base ABCD. M is the midpoint of BC.

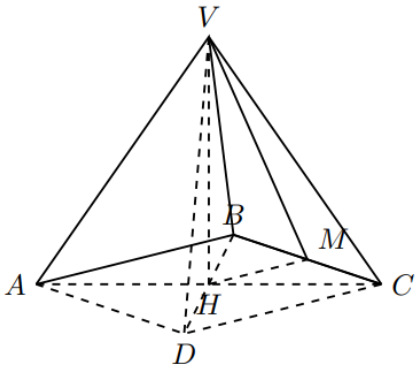


Diagram NOT accurately drawn

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

(b) Calculate the angle between the triangular face V BC and the base plane ABCD. Give your answer correct to 1 decimal place.

(Total for Question 24 is 5 marks)

Model Solution	Practice Perfect Questions

26 Solve the equation to 3 significant figures:

$$\frac{3}{x-2} - \frac{4}{2x+1} = 1$$

Show clear algebraic working.

(5 marks)

Model Solution	Practice Perfect Questions

27 Show that the following expression can be written in the form $a + b\sqrt{3}$, where a and b are integers:

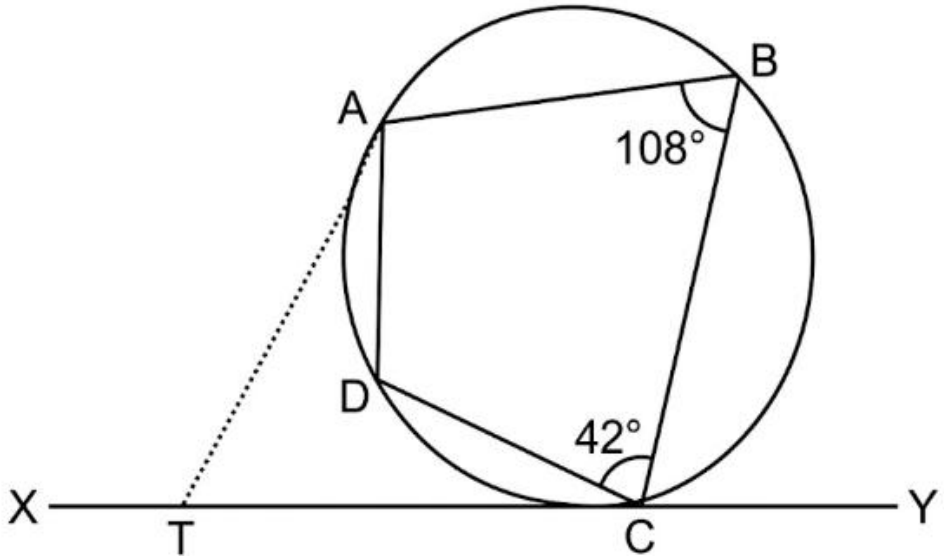
$$\frac{\left(2+\sqrt{3}\right)^2}{2-\sqrt{3}}$$

Show all stages of your working clearly.

(4 marks)

Model Solution	Practice Perfect Questions

28. Points A, B, C, and D lie on the circumference of a circle.



The straight line XY is a tangent to the circle at the point C.
The line AD is extended to meet the tangent at a point T.
Angle $ACX = 42°$ and Angle $ABC = 108°$.
Calculate the size of Angle CDA.
You must give a formal geometrical reason for each stage of your working.

(3 marks)

Model Solution	Practice Perfect Questions

TOTAL FOR PAPER = 100 MARKS