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Boost Your Skills & Grades in Grade 9 Maths

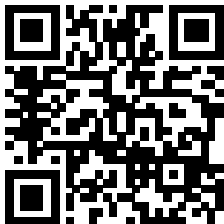
1MA1 Nov 2026 Paper 1 Best Guess Paper Solutions

----- Disclaimer -----

This paper has been created based on topics from previous years and careful analysis of what topics are highly likely to appear in paper 1H. The paper should be excellent at helping students revise for exams. This paper is specifically targeted at high-attaining students aiming for a Grade 9, so it is intentionally more rigorous and challenging than a standard real exam paper. The topics from this paper may well appear in the real exams, however there is absolutely no guarantee of this. There are deliberately more questions at a higher grade than you would expect.

Despite what you might see on social media it is not possible to "predict" the paper perfectly. This is usually what people say when they are selling you something...

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The Playlist for Solutions can be found



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

1MA1 Grade 9 Best Guess Paper 1 - Model Answers & Solutions

Question 1 (Fractions) [3 marks]

Solution:

Convert to improper fractions: $9/4 \div 3/5$.

Multiply by reciprocal: $9/4 \times 5/3 = 45/12$.

Simplify to $15/4 = 3 \frac{3}{4}$.

Question 2 (Ratio Sharing) [2 marks]

Solution:

Chloe has 7 more parts than Alex ($9 - 2 = 7$).

$\pounds 35 \div 7 = \pounds 5$ per part.

Ben receives $5 \times \pounds 5 = \pounds 25$.

Question 3 (Frequency Polygon) [3 marks]

Solution:

(a) Plot points at midpoints (5,14), (15,18), (25,4), (35,6), (45,6), (55,2).

(b) Modal class: $10 < t \leq 20$.

Question 4 (Algebra) [5 marks]

Solution:

(a) a^{16}

(b) c^{18}

(c)(i) $(x - 6)(x - 4)$

(ii) $x = 6, x = 4$.

Question 5 (Error Intervals) [2 marks]

Solution:

0.046 rounded to 2 s.f.

Lower bound: 0.0455. Upper bound: 0.0465.

Interval: $0.0455 \leq y < 0.0465$.

Question 6 (Set Theory) [4 marks]

Solution:

$E = \{1, 2, 3, 4, 6, 12\}$. $A = \{1, 2, 3, 4, 6, 12\}$. $B = \{3, 6, 9, 12\}$.

(a) $A \cap B = \{3, 6, 12\}$.

(b) $A \cup B$ has 7 elements. $P = 7/12$.

Question 7 (Algebraic Proof) [3 marks]

Solution:

Expand brackets and simplify algebraic expressions to demonstrate equivalence on both sides of the equation.

Question 8 (Expanding Triple Brackets) [3 marks]

Solution:

$$(x - 2)(x + 3) = x^2 + x - 6.$$

$$\begin{aligned} \text{Multiply by } (2x + 1): & 2x^3 + x^2 + 2x^2 + x - 12x - 6 \\ & = 2x^3 + 3x^2 - 11x - 6. \end{aligned}$$

Question 9 (Line Segment) [3 marks]

Solution:

Difference in $x = 8$. Difference in $y = -6$.

$$\text{Length} = \sqrt{(8^2 + (-6)^2)} = \sqrt{(64+36)} = \sqrt{100} = 10.$$

Question 10 (Standard Form) [3 marks]

Solution:

$$(a) 4.07 \times 10^{-5}.$$

$$(b) (3.2 \times 5) \times 10^7 = 16 \times 10^7 = 1.6 \times 10^8.$$

Question 11 (Density & Mass) [3 marks]

Solution:

$$\text{Mass A} = 1.2 \times 300 = 360\text{g. Mass B} = 0.8 \times 200 = 160\text{g.}$$

$$\text{Total Mass} = 520\text{g. Total Vol} = 500\text{cm}^3.$$

$$\text{Density} = 520 \div 500 = 1.04 \text{ g/cm}^3.$$

Question 12 (Cumulative Frequency) [8 marks]

Solution:

$$(a) \text{ CF: } 8, 23, 60, 70, 77, 80.$$

(b) Plot CF graph at upper bounds.

$$(c) \text{ Median} \approx \text{£}346.$$

$$(d) \text{ IQR} \approx \text{£}120.$$

$$(e) >\text{£}430 \approx 17 \text{ workers.}$$

Question 13 (Quadratic Inequality) [3 marks]

Solution:

$$3x^2 - 5x - 14 \leq 0.$$

$$\text{Factorise: } (3x + 4)(x - 2) \leq 0.$$

$$\text{Critical values: } x = -4/3, x = 2.$$

$$\text{Range: } -4/3 \leq x \leq 2.$$

Question 14 (Proportionality) [4 marks]

Solution:

Set up equations $y = kx^2$ and $y = c/\sqrt{x}$.

Substitute given values to find constants k and c .

Combine to express y in terms of x .

Question 15 (Algebraic Fractions) [3 marks]

Solution:

$$(x^2 - 9) / (2x^2 + 5x - 3).$$

Factorise: $(x - 3)(x + 3) / (2x - 1)(x + 3)$.

Cancel $(x + 3)$ to leave $(x - 3)/(2x - 1)$.

Question 16 (Circle Theorems) [4 marks]

Solution:

Angle BDC = 35° .

Reason: Angles subtended by the same arc at the circumference are equal (angles in the same segment).

Question 17 (Functions) [6 marks]

Solution:

Evaluate $f^{-1}(x)$ and $gf(x)$.

For $g(x) = 21$, $x^2 - 4 = 21 \rightarrow x^2 = 25 \rightarrow x = \pm 5$.

Question 18 (Subject of Formula) [3 marks]

Solution:

Rearrange the equation to isolate y . Factorise out y if it appears in multiple terms, then divide.

Question 19 (Simultaneous Equations) [5 marks]

Solution:

$y = 7 - 2x$. Sub into circle eq: $x^2 + (7 - 2x)^2 - 4x + 2(7 - 2x) = 32$.

Expand, simplify to quadratic, solve for x , then substitute to find y .

Question 20 (Completing the Square) [3 marks]

Solution:

$$3(x^2 - 4x) + 7 = 3[(x - 2)^2 - 4] + 7 = 3(x - 2)^2 - 12 + 7 = 3(x - 2)^2 - 5.$$

Turning point = $(2, -5)$.

Question 21 (Circle & Line Intersection) [5 marks]

Solution:

Circle radius = $\sqrt{6^2 + 8^2} = 10$. Q $x = -8$ in 3rd quad $\rightarrow y = -6$.

Grad PQ = $(8 - -6)/(6 - -8) = 1$.

Eq: $y - 8 = 1(x - 6) \rightarrow y = x + 2$. $k = 2$.

Question 22 (Solving Algebraic Fractions) [5 marks]

Solution:

Multiply by $(x - 2)(2x + 1)$.

$$3(2x + 1) - 2(x - 2) = (x - 2)(2x + 1).$$

Expand brackets & solve resulting quadratic equation.

Question 23 (Rationalising Denominators) [4 marks]

Solution:

$$(2 + \sqrt{3})^2 = 7 + 4\sqrt{3}.$$

Multiply numerator and denominator by conjugate $(2 + \sqrt{3})$.

$$\text{Denom} = 4 - 3 = 1. \text{ Num} = (7 + 4\sqrt{3})(2 + \sqrt{3}) = 26 + 15\sqrt{3}.$$

Question 24 (Graph Transformations) [4 marks]

Solution:

(a) $y = -f(x + 3)$: Shift left 3, reflect in x-axis $\rightarrow (-5, -5)$.

(b) $y = 3f(\frac{1}{2}x)$: Stretch x by 2, stretch y by 3 $\rightarrow (-4, 15)$.