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1MA1 Nov 2026 Paper 2 Best Guess Paper

Higher · Model Answers

————————————- Disclaimer ————————————-

This practice paper has been crafted through careful analysis of historical exam trends to identify topics highly likely to appear in the Pearson Edexcel 1MA1 Paper 2H. It is specifically designed as a targeted revision tool for students aiming to secure a Grade 5 on the Higher tier. The questions focus heavily on the critical Grade 4 and 5 crossover topics and accessible procedural skills needed to confidently reach that boundary.

While these topics are highly relevant for targeted revision, there is absolutely no guarantee they will appear on the real exam. Beware of social media claims promising perfect "predicted" papers—these are usually just sales tactics. The most effective preparation strategy remains a comprehensive revision of the entire mathematics specification.

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Walkthrough playlist

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Higher Paper 2H · Model Answers

GCSE Mathematics 1MA1 · November 2026 · Target 4/5 · 22 questions · 80 marks

Question 1 · Arithmetic Sequences

(a) The sequence increases by 4 each time, so the formula starts with 4n. The “zeroth” term before the 3 would be 3 – 4 = –1. The nth term is 4n – 1.

(b) Set the expression equal to 87 and solve:
4n – 1 = 87 ⇒ 4n = 88 ⇒ n = 22.
Because n resolves to a whole number, 87 is exactly the 22nd term in the sequence.

Answer: (a) 4n – 1 (b) 87 is the 22nd term

Question 2 · Polygons and Isosceles Triangles

Step 1: Angles in quadrilateral PQRS add to 360°.
∠PSR = 360° – (65° + 105° + 75°) = 115°.

Step 2: T, S and R lie on a straight line, so the adjacent angles at S add to 180°.
∠PST = 180° – 115° = 65°.

Step 3: Triangle PST is isosceles because PT = PS. Its base angles at T and S are equal.
The marked angle x is at T, so x = 65°.

Answer: x = 65°

Question 3 · Inequalities

(a) Solve it exactly like a normal equation. Add 5 to both sides: 3x > 15. Divide by 3: x > 5.

(b) Draw an open circle at 5 on the number line (to signify it does not equal 5), and draw a straight line/arrow pointing to the right.

Answer: (a) x > 5 (b) Open circle at 5; arrow to the right

Question 4 · Estimated Mean from Grouped Data

Step 1: Identify the midpoints for each class interval (x):
2.5, 7.5, 12.5, 17.5, 22.5.

Step 2: Multiply each midpoint by its frequency to create an fx column:
6 × 2.5 = 15
14 × 7.5 = 105
18 × 12.5 = 225
8 × 17.5 = 140
4 × 22.5 = 90

Step 3: Sum the fx values: 15 + 105 + 225 + 140 + 90 = 575.

Step 4: Divide by the total frequency (50): 575 ÷ 50 = 11.5 kg.

Answer: Estimated mean = 11.5 kg

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Question 5 · Compound Interest

Step 1: Set up the compound interest calculation:
Principal × (Multiplier)$^{\text{Years}}$.
A 3.1% increase gives a multiplier of 1.031.

Step 2: Evaluate £5200 × $(1.031)^4$ = £5875.407655…

Step 3: Round to two decimal places for currency.

Answer: £5875.41

Question 6 · Algebra

(a) Apply the power of 5 to the coefficient ($2^5 = 32$) and multiply the indices ($(p^3)^5 = p^{15}$). Result: $32p^{15}$.

(b) Expand the brackets:
$2p(4p – 3) = 8p^2 – 6p$ and $–p(p – 4) = –p^2 + 4p$.
Collect the like terms:
$8p^2 – p^2 – 6p + 4p = 7p^2 – 2p$.

(c) Rearrange t = 4c + d. Subtract d from both sides: t – d = 4c. Divide by 4: c = (t – d)/4.

Answer: (a) $32p^{15}$ (b) $7p^2 – 2p$ (c) c = (t – d)/4

Question 7 · Forming Equations with Shapes

Step 1: Opposite sides of a rectangle are equal in length. Equate the two algebraic expressions: 5x – 1 = 3x + 5.

Step 2: Solve for x. 2x = 6 ⇒ x = 3.

Step 3: Find the vertical height by substituting x into an expression.
5(3) – 1 = 14 cm.

Step 4: Calculate the area using base × height. 14 × 24 = 336 cm^2.

Answer: Area = 336 cm^2

Question 8 · Fractions, Percentages & Ratio

Step 1: Find the value of one ratio part. Total parts = 7 + 3 + 2 = 12.
720 ÷ 12 = 60.

Step 2: Find the total quantities of each bulb. Tulips = 420, Crocus = 180, Daffodils = 120.

Step 3: Calculate the yellow quantities for each type:
Yellow Tulips: 40% of 420 = 168.
Yellow Crocus: (2/3) × 180 = 120.
Yellow Daffodils: (3/4) × 120 = 90.

Step 4: Total the yellow bulbs: 168 + 120 + 90 = 378.

Answer: 378 yellow bulbs

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Question 9 · Percentage Decrease

Step 1: Calculate the absolute decrease in sales: 600 – 432 = 168 pairs.

Step 2: Divide the decrease by the original amount and multiply by 100:
(168/600) × 100 = 28%.

Answer: 28% decrease

Question 10 · Transformations

(a) A 90° anticlockwise rotation around (0, 0) maps (x, y) to (–y, x). The vertices (3, 1), (5, 1), (3, 2) move to (–1, 3), (–1, 5), (–2, 3). Connect these to draw Triangle C.

(b) To enlarge from centre (5, 1) with scale factor 3, multiply the vector distance from the centre to each point by 3.
The point at (5, 1) remains at (5, 1).
Point (3, 1) moves from 2 left to 6 left at (–1, 1).
Point (3, 2) moves from 2 left, 1 up to 6 left, 3 up at (–1, 4).
Connect these to draw Triangle B.

Answer: (a) C: (–1, 3), (–1, 5), (–2, 3)
(b) B: (–1, 1), (–1, 4), (5, 1)

Question 11 · Right-Angled Triangles: Pythagoras & SOHCAHTOA

Step 1: Find the shared horizontal side using Pythagoras' theorem on the top triangle.
Base = $\sqrt{(15^2 - 9^2)} = \sqrt{144} = 12$ cm.

Step 2: Use trigonometry on the bottom triangle. The 40° angle is opposite the 12 cm side, and x is the hypotenuse. The ratio is sin(40°) = 12/x.

Step 3: Rearrange and solve:
x = 12/sin(40°) = 18.668… cm.
Give the answer to 1 decimal place.

Answer: x = 18.7 cm

Question 12 · Probability Trees

(a) The branches for the first event sum to 1:
Rain = 0.35, Does not rain = 0.65.
For the second event, the "Rains" branches are Cancelled = 0.8, Not Cancelled = 0.2.
The "Does not rain" branches are Cancelled = 0.1, Not Cancelled = 0.9.

(b) Calculate the probability of cancellation by multiplying along the two successful pathways and summing them:
(0.35 × 0.8) + (0.65 × 0.1) = 0.28 + 0.065 = 0.345.

Answer: (a) Complete the tree with the probabilities above
(b) P(cancelled) = 0.345

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Question 13 · Area of Circles Problem Solving

Step 1: Calculate the area of the large outer semicircle using r = 5.
Area = $(1/2)\pi \times 5^2 = 12.5\pi$.

Step 2: Calculate the area of the small inner empty semicircle using r = 3.
Area = $(1/2)\pi \times 3^2 = 4.5\pi$.

Step 3: Find the total paved area by subtracting the two semicircles:
$12.5\pi - 4.5\pi = 8\pi$ m^2.

Step 4: Calculate the total cost:
$8\pi \times £24 = £603.185789\ldots$
Yes, Jo has enough money because the £603.19 cost is well under her £1200 budget.

Answer: Yes — the cost is £603.19, less than £1200

Question 14 · Similar Triangles

Step 1: Determine the linear scale factor from the corresponding sides AB and DE: $18 \div 6 = 3$.

(a) To find DF (the smaller triangle), divide the corresponding larger side by the scale factor: $15 \div 3 = 5$ cm.

(b) To find BC (the larger triangle), multiply the corresponding smaller side by the scale factor: $8 \times 3 = 24$ cm.

Answer: (a) DF = 5 cm (b) BC = 24 cm

Question 15 · Straight Line Equations

Step 1: Find the gradient of line L_1 by rearranging its equation into the format y = mx + c.
$3y - 2x = 12 \Rightarrow 3y = 2x + 12 \Rightarrow y = (2/3)x + 4$.
The gradient m is 2/3.

Step 2: Because L_2 is parallel, it has the exact same gradient: m = 2/3.

Step 3: Because L_2 passes directly through the y-axis at coordinate (0, 5), its y-intercept c = 5.

Answer: y = (2/3)x + 5

Question 16 · The Quadratic Formula

Step 1: Compare $5x^2 - 6x - 3 = 0$ with $ax^2 + bx + c = 0$.
a = 5, b = –6, c = –3.

Step 2: Substitute into $x = (-b \pm \sqrt{(b^2 - 4ac)})/(2a)$.
$x = (6 \pm \sqrt{((-6)^2 - 4 \times 5 \times (-3))})/10$
$= (6 \pm \sqrt{96})/10$.

Step 3: Calculate both roots:
x = 1.579795… or x = –0.379795…

Step 4: Round both values to 3 significant figures. The final zero in –0.380 is needed to show 3 significant figures.

Answer: x = 1.58 or x = –0.380

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Question 17 · Zero, Negative and Combined Indices

(a) Any non-zero number raised to the power 0 equals 1. Since $5^k = 1$, $k = 0$.

(b) Write 27 as a power of 3, then subtract indices when dividing:
$27/3^8 = 3^3/3^8 = 3^{3-8} = 3^{-5}$.
Therefore $m = -5$.

(c) Multiply indices for a power of a power, then add indices when multiplying:
$(7^{-4})^3 \times 7^5 = 7^{-12} \times 7^5 = 7^{-7}$.
Therefore $p = -7$.

Answer: (a) k = 0 (b) m = –5 (c) p = –7

Question 18 · Density of a Sphere

Step 1: Find the sphere's volume using $V = (4/3)\pi r^3$.
$V = (4/3)\pi \times 2.4^3 = 57.905835\ldots$ cm^3.

Step 2: Density = mass ÷ volume.
Density = $385 \div 57.905835\ldots = 6.648725\ldots$ g/cm^3.

Step 3: Round to 3 significant figures. Keep the unrounded volume until the final calculation.

Answer: 6.65 g/cm^3

Question 19 · Interquartile Range

Step 1: There are 11 ordered values. The median is the 6th value, 14. Exclude this median when dividing the data into two halves.

Step 2: The lower half is 3, 5, 8, 10, 11. Its middle value is 8, so $Q_1 = 8$.
The upper half is 15, 18, 20, 21, 25. Its middle value is 20, so $Q_3 = 20$.

Step 3: Interquartile range = $Q_3 - Q_1 = 20 - 8 = 12$.

Answer: Interquartile range = 12 emails

Question 20 · Inverse and Composite Functions

(a) Step 1: Write $y = (3x - 5)/2$ and make x the subject:
$2y = 3x - 5 \Rightarrow 2y + 5 = 3x \Rightarrow x = (2y + 5)/3$.

(a) Step 2: Express this rearrangement as the inverse function:
$f^{-1}(x) = (2x + 5)/3$.

(b) Step 1: In gf(3), apply f first:
$f(3) = (3 \times 3 - 5)/2 = 2$.

(b) Step 2: Substitute 2 into g:
$g(2) = 2 \times 2^2 + 1 = 9$.

Answer: (a) $f^{-1}(x) = (2x + 5)/3$ (b) gf(3) = 9

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Question 21 · Histogram Probability

Step 1: Frequency is proportional to bar area, not bar height. Since the vertical scale is unlabelled, use consistent relative density units. The four bar heights are 2, 4, 9 and 7 units.

Step 2: Find the total relative frequency from all four bars:
0–10: 10 × 2 = 20
10–30: 20 × 4 = 80
30–45: 15 × 9 = 135
45–60: 15 × 7 = 105
Total = 20 + 80 + 135 + 105 = 340.

Step 3: Find the area between 25 g and 50 g:
25–30: 5 × 4 = 20
30–45: 15 × 9 = 135
45–50: 5 × 7 = 35
Total = 190.

Step 4: Divide the selected area by the total area:
P(25 to 50) = 190/340 = 19/34 ≈ 0.558824.

Answer: Estimated probability = 19/34 ≈ 0.559

Question 22 · Similar Solids: Area and Volume

Step 1: Find the surface-area scale factor from A to B:
$(80\pi)/(45\pi) = 16/9$.

Step 2: Surface areas scale with the square of the linear factor. Take the square root:
Linear factor = $\sqrt{(16/9)} = 4/3$.

Step 3: Volumes scale with the cube of the linear factor:
Volume factor = $(4/3)^3 = 64/27$.

Step 4: Multiply A's volume by this factor:
Volume B = 810 × 64/27 = 1920 cm^3.

Answer: Volume B = 1920 cm^3