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1MA1 Nov 2026 Paper 1 Best Guess Paper

Higher · Standard · Mark Scheme

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This independently compiled practice paper is designed for students preparing for the Pearson Edexcel GCSE Mathematics 1MA1 Higher Tier, Paper 1 (non-calculator). It includes a range of accessible and challenging Higher Tier questions for standard exam practice, rather than focusing only on a particular target grade.

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The best preparation is to revise the full specification. Attempt the paper, use the mark scheme and worked solutions to review your work, and practise related topics with the free worksheets and clips at www.mygrade9mathstutor.com.

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Video walkthrough

Non-calculator · 22 questions · 80 marks · Suggested time: 1 hour 30 minutes.
Attempt every question. Show your working, then review the mark scheme and worked solutions.

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M: method mark · **A**: accuracy mark · **B**: independent mark.
Accept equivalent valid methods. Accuracy marks require the associated method, shown or implied. Follow-through is indicated where applicable. This is an independent practice-paper scheme, not an official Pearson scheme.

Question 1 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
1	9/4 × 5/3 = 45/12 = 15/4	**3¾**	**3**	**M1** — Convert the mixed number correctly to 9/4. **M1** — Multiply by the reciprocal 5/3, or an equivalent division method. **A1** — 3¾ in simplest mixed-number form.

Question 2 · 2 marks

Q / part	Working / method	Answer	Marks	Marking guidance
2	35 ÷ (9 – 2) = 5; 5 × 5	**£25**	**2**	**M1** — Use the seven-part difference to obtain £5 per part, or 35 × 5/7. **A1** — 25, with units stated or implied.

Question 3 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	Midpoints: 5, 15, 25, 35, 45, 55	**Polygon through (5,14), (15,18), (25,4), (35,6), (45,6), (55,2)**	**2**	**B1** — At least four correct midpoint-frequency points. **B1** — All six points correct, joined in order by straight segments.
(b)	Highest frequency is 18.	**10 < t ≤ 20**	**1**	**B1** — Correct modal class interval.

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Question 4 · 5 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	$6 + 10 = 16$	**a^{16}**	**1**	**B1** — Correct power.
(b)	$30 - 12 = 18$	**c^{18}**	**1**	**B1** — Correct power.
(c)(i)	$-4 \times -6 = 24$; $-4 + -6 = -10$	**$(x - 4)(x - 6)$**	**2**	**M1** — Attempt two factors using numbers with product 24 or sum −10. **A1** — Both factors correct.
(c)(ii)	Set each factor equal to zero.	**x = 4 or x = 6**	**1**	**B1** — Both roots; follow through a valid factorisation from (i).

Question 5 · 2 marks

Q / part	Working / method	Answer	Marks	Marking guidance
5	Rounding step 0.001; half-step 0.0005	**$0.0455 \leq y < 0.0465$**	**2**	**B1** — Correct lower boundary, including equality. **B1** — Correct upper boundary, excluding equality.

Question 6 · 4 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	Members common to A and B	**{3, 6, 12}**	**2**	**B2** — All three correct with no extras. B1 for two correct with no extras, or all three with one extra.
(b)	$A \cup B = \{1,2,3,4,6,9,12\}$	**7/12**	**2**	**M1** — Identify/count the seven members of the union. **A1** — 7/12 or equivalent.

Question 7 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
7	$x = 0.381818\ldots$; $1000x - 10x = 378$; $990x = 378$	**21/55**	**3**	**M1** — Two suitable multiples with matching recurring tails, such as 1000x and 10x. **M1** — Subtract to eliminate the recurring decimal and obtain $990x = 378$, or equivalent. **A1** — Complete algebraic proof that $x = 21/55$.

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Question 8 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
8	$(x - 2)(x + 3) = x^2 + x - 6$; multiply by $(2x + 1)$	**$2x^3 + 3x^2 - 11x - 6$**	**3**	**M1** — Correct expansion of two brackets. **M1** — Distribute the third bracket across all three terms. **A1** — Fully simplified cubic.

Question 9 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
9	$\Delta x = 8$; $\Delta y = -6$; $\sqrt{(8^2 + 6^2)}$	**10**	**3**	**M1** — Both coordinate differences correct. **M1** — Use Pythagoras with the two differences. **A1** — Exact length 10.

Question 10 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	$0.0000407 = 4.07 \times 10^{-5}$	**4.07×10^{-5}**	**1**	**B1** — Correct standard form.
(b)	$(3.2 \times 5) \times 10^{4+3} = 16 \times 10^7$	**1.6×10^8**	**2**	**M1** — Correct multiplication of coefficients and addition of indices. **A1** — Correct answer in standard form.

Question 11 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
11	Masses 360 g and 160 g; total 520 g; volume 500 cm^3	**1.04 g/cm^3**	**3**	**M1** — Find each mass by density × volume. **M1** — Divide combined mass by combined volume, not average the densities. **A1** — 1.04 g/cm^3.

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Question 12 · 8 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	Running totals of the six frequencies	**8, 23, 60, 70, 77, 80**	**1**	**B1** — All six cumulative frequencies correct.
(b)	Plot against upper class boundaries 200,…,700.	**Cumulative-frequency curve**	**2**	**B1** — At least five points plotted correctly at upper boundaries; allow follow-through from (a). **B1** — All points correct and joined by a suitable increasing curve.
(c)	Read across from cumulative frequency 40.	**About £346**	**1**	**B1** — A reasonable graph reading, typically £340–£350; follow through their valid graph.
(d)	Q_1 at CF 20 ≈ £280; Q_3 at CF 60 ≈ £400.	**IQR ≈ £120**	**2**	**M1** — Read both quartiles at CF 20 and 60. **A1** — Subtract to obtain about £120; allow reasonable graph-reading variation and follow-through.
(e)	CF at £430 ≈ 63; 80 – 63	**About 17 workers**	**2**	**M1** — Read cumulative frequency at £430 and subtract it from 80. **A1** — About 17; accept a consistent reading from their valid graph.

Question 13 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
13	$3x^2 - 14x - 5 \le 0$; $(3x + 1)(x - 5) \le 0$	**$-1/3 \le x \le 5$**	**3**	**M1** — Rearrange and factorise, or obtain critical values by a valid method. **M1** — Identify both critical values $-1/3$ and 5. **A1** — Closed interval between the roots, including both endpoints.

Question 14 · 4 marks

Q / part	Working / method	Answer	Marks	Marking guidance
14	$y = kt^2$, $k = 5$; $t = c/\sqrt{x}$, $c = 6$; $y = 5(6/\sqrt{x})^2$	**$y = 180/x$**	**4**	**M1** — Use $y = kt^2$ and given values to find $k = 5$. **M1** — Use $t = c/\sqrt{x}$ and given values to find $c = 6$. **M1** — Substitute the expression for t into $y = 5t^2$. **A1** — $y = 180/x$ in simplest form.

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Question 15 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
15	$(x^2 - 9)/(2x^2 + 5x - 3) = (x - 3)(x + 3)/[(2x - 1)(x + 3)]$	**$(x - 3)/(2x - 1)$**	**3**	**M1** — Factorise numerator as $(x - 3)(x + 3)$. **M1** — Factorise denominator as $(2x - 1)(x + 3)$. **A1** — Cancel the common factor and give the simplified expression.

Question 16 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
16	$\angle BAC$ and $\angle BDC$ subtend the same chord BC.	**35°**	**3**	**M1** — Identify that the two marked angles subtend the same chord/arc BC. **A1** — $\angle BDC = 35°$. **B1** — State the valid reason: angles in the same segment are equal. Equivalent correct circle-theorem reasoning accepted.

Question 17 · 6 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	$y(x - 3) = 2x + 1$; $x(y - 2) = 3y + 1$	**$f^{-1}(x) = (3x + 1)/(x - 2)$**	**3**	**M1** — Multiply out $y(x - 3) = 2x + 1$. **M1** — Collect and factor the terms involving the original input. **A1** — Correct inverse. Domain $x \neq 2$ may be stated but is not required for this mark.
(b)	$[(2x + 1)/(x - 3)]^2 - 4$	**$(28x - 35)/(x - 3)^2$**	**2**	**M1** — Correct composition, and use a common denominator. **A1** — Correct fully simplified single fraction, or $7(4x - 5)/(x - 3)^2$.
(c)	$x^2 - 4 = 21$; $x^2 = 25$	**$x = -5$ or $x = 5$**	**1**	**B1** — Both solutions.

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Question 18 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
18	$p^2(3y - k) = 2y + 5$; $y(3p^2 - 2) = p^2k + 5$	**$y = (p^2k + 5)/(3p^2 - 2)$**	**3**	**M1** — Square and clear the denominator. **M1** — Collect the y terms and factor out y. **A1** — Correct formula.

Question 19 · 5 marks

Q / part	Working / method	Answer	Marks	Marking guidance
19	$y = 7 - 2x$; $5x^2 - 36x + 31 = 0$; $(5x - 31)(x - 1) = 0$	**(1,5) and (31/5, –27/5)**	**5**	**M1** — Substitute $y = 7 - 2x$ into the curve equation. **M1** — Expand and simplify to $5x^2 - 36x + 31 = 0$. **M1** — Factorise or use another valid quadratic-solving method. **A1** — Both correct x values, 1 and 31/5. **A1** — Both correct paired coordinates.

Question 20 · 3 marks

Q / part	Working / method	Answer	Marks	Marking guidance
20	$3x^2 - 12x + 7 = 3[(x - 2)^2 - 4] + 7 = 3(x - 2)^2 - 5$	**(2,–5)**	**3**	**M1** — Factor out 3 and complete the square inside the bracket. **M1** — Obtain $3(x - 2)^2 - 5$. **A1** — Turning point (2,–5).

Question 21 · 4 marks

Q / part	Working / method	Answer	Marks	Marking guidance
21	$(2 + \sqrt{3})^2 = 7 + 4\sqrt{3}$; multiply by $(2 + \sqrt{3})/(2 + \sqrt{3})$	**$26 + 15\sqrt{3}$; a = 26, b = 15**	**4**	**M1** — Expand the original numerator to $7 + 4\sqrt{3}$. **M1** — Multiply numerator and denominator by the conjugate $2 + \sqrt{3}$. **M1** — Use denominator 1 and expand the new numerator. **A1** — $26 + 15\sqrt{3}$, identifying a and b, or equivalent conclusion.

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Question 22 · 4 marks

Q / part	Working / method	Answer	Marks	Marking guidance
(a)	(–2,5) → (–5,5) → (–5,–5)	**(–5,–5)**	**2**	**B1** — Correct horizontal coordinate –5. **B1** — Correct vertical coordinate –5.
(b)	(–2,5) → (2,5) → (2,8)	**(2,8)**	**2**	**B1** — Correct horizontal coordinate 2. **B1** — Correct vertical coordinate 8.