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4MA1 Nov 2026 Paper 2 Best Guess Paper

Mark scheme

———————————- 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 2H. 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...

The best way to prepare for the exams is to revise all topics
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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

Q	Working	Answer	Mark	Notes
1	$\frac{10+q}{2} = 11 \Rightarrow q = 12$ Mode = 19 $\Rightarrow r = 19$ Range = $19 - p = 16 \Rightarrow p = 3$	$p = 3$ $q = 12$ $r = 19$	3	**B1** for $q = 12$ **B1** for $r = 19$ **B1** for $p = 3$
2	$90 \times 1000 = 90000$ m/h $90000 \div 3600$ OR $90 \div 3.6$	25	3	**M1** for converting km to m ($\times 1000$) **M1** for converting hours to seconds ($\div 3600$) **A1** cao
3	(a) $(2^5)(p^{3\times5})$	$32p^{15}$	2	**B2** for $32p^{15}$ (B1 for $32p^k$ or kp^{15})
	(b) $8p^2 - 6p - p^2 + 4p$	$7p^2 - 2p$	2	**M1** for expanding to get at least 3 correct terms with correct signs **A1** cao
	(c) $3x - 2 = 4(5 - x)$ $3x - 2 = 20 - 4x$ $7x = 22$	$x = \frac{22}{7}$	3	**M1** for multiplying both sides by 4 **M1** for isolating x terms **A1** for $22/7$ oe
4	$5x - 1 = 3x + 5$ $2x = 6 \Rightarrow x = 3$ Height = $5(3) - 1 = 14$	336	4	**M1** for setting up equation $5x - 1 = 3x + 5$ **M1** for solving to find $x = 3$

Q	Working	Answer	Mark	Notes
	Area = 14×24			**M1** for substituting x to find height (14) **A1** cao
5	$7 + 3 + 2 = 12$ parts $720 \div 12 = 60$ Tulips: $7 \times 60 = 420$ Crocus: $3 \times 60 = 180$ Daffodils: $2 \times 60 = 120$ Yellow T = $0.40 \times 420 = 168$ Yellow C = $\frac{2}{3} \times 180 = 120$ Yellow D = $\frac{3}{4} \times 120 = 90$ Total = $168 + 120 + 90$	378	5	**M1** for finding value of one share (60) **M1** for finding total of at least one flower type **M1** for finding yellow count of at least one flower type **M1** for summing all three correct yellow counts **A1** cao
6	$\frac{600-432}{600} \times 100$ OR $\frac{168}{600}$	28	3	**M1** for difference (168) **M1** for $\frac{168}{600} \times 100$ oe **A1** cao
7	(a) Vertices of C at $(-1,3)$, $(-1,5)$, $(-2,3)$	Triangle C drawn	2	**B2** for correctly rotated triangle (B1 for correct

Q	Working	Answer	Mark	Notes
				orientation but wrong position)
	(b) Vertices of B at $(3,-2)$, $(-1,-2)$, $(3,-4)$	Triangle B drawn	3	**B3** for correctly enlarged triangle (B2 for 2 correct vertices, B1 for scale factor -2 correct but wrong centre)
8	(a) Points $(2,0)$, $(0,4)$, etc.	Straight line drawn	2	**B2** for correct solid line drawn for x from -2 to 3
	(b) Identifying boundaries $x = 0$, $y = -1$	Region R shaded	3	**M1** for lines $x = 0$ and $y = -1$ drawn **A2** for correctly shaded triangular region
9	(a) 8,23,60,70,77,80	Correct CF	1	**B1** all correct
	(b) Plotting points at $(200,8)$, $(300,23)$, etc.	CF Graph	2	**M1** for plotting at upper bounds consistently **A1** for smooth curve/polygon
	(c) Reading from CF = 40	$\approx 340 - 350$	1	**B1** ft from their graph
	(d) UQ (CF=60) = 400 LQ (CF=20) = 280 $400 - 280$	≈ 120	2	**M1** for reading from 60 and 20 **A1** ft from their graph
	(e) Reading up from 430 $\Longrightarrow$ CF ≈ 63 $80 - 63$	≈ 17	2	**M1** for reading CF at 430 **A1** ft from their graph

Q	Working	Answer	Mark	Notes
10	Interior angle $= \frac{(11-2)\times 180}{11} = 147.27\ldots^\circ$ Trapezium BCDE sum $= 360^\circ$ $\angle CBE + \angle DEB = 360 - 2(147.27\ldots)$ $2 \times \angle DEB = 65.45\ldots \Rightarrow \angle DEB = 32.72\ldots^\circ$ $\angle BEF = 147.27\ldots - 32.72\ldots$	114.5°	4	**M1** for calculating one interior angle of 11-sided polygon ($\frac{1620}{11}$) **M1** for recognising BCDE is an isosceles trapezium **M1** for finding $\angle DEB$ **A1** for 114.5
11	(a) Rain branch: 0.65 Top secondary: 0.2 Bottom secondary: 0.1, 0.9	Correct Tree	2	**B2** for all probabilities correct (B1 for 2 correct)
	(b) $P(R \cap C) = 0.35 \times 0.8 = 0.28$ $P(NR \cap C) = 0.65 \times 0.1 = 0.065$ $0.28 + 0.065$	0.345	3	**M1** for 0.35×0.8 OR 0.65×0.1 **M1** for summing the two pathways **A1** cao
12	Co-interior angle at B $= 180 - 45 = 135^\circ$ Inside $\triangle ABC$ at B $= 360 - 135 - 135 = 90^\circ$ $\tan(A) = \frac{20}{15} \Rightarrow A = 53.13^\circ$	098.1°	4	**M1** for finding angle inside triangle at B is 90° **M1** for use of tan **M1** for adding 45° to interior angle A

Q	Working	Answer	Mark	Notes
	Bearing = $045 + 53.13$			**A1** for 098.1 (must have leading zero)
13	(a) $(-2)^3 - 3(-2) + 1$ $(0)^3 - 3(0) + 1$	$-1,1,3$	2	**B2** for all 3 correct (B1 for 1 or 2 correct)
	(b) Plotting points	Smooth cubic curve	2	**B2** for smooth curve through all points
	(c) $x^3 - 3x - 1 = 0 \Longrightarrow x^3 - 3x + 1 = 2$ Draw $y = 2$	$-1.5, -0.4, 1.9$	2	**M1** for drawing $y = 2$ **A1** for all three values ± 0.1
14	$(2^4)^x \times 2^3 = (2^5)^{x-1}$ $2^{4x+3} = 2^{5x-5}$ $4x + 3 = 5x - 5$	$x = 8$	3	**M1** for expressing all terms with base 2 **M1** for equating indices **A1** cao
15	$\frac{dy}{dx} = 3x^2 - 4x - 4$ At $x = 3, m = 3(9) - 12 - 4 = 11$ At $x = 3, y = 27 - 18 - 12 + 7 = 4$ $y - 4 = 11(x - 3)$	$y = 11x - 29$	3	**M1** for differentiating to find gradient **M1** for finding y-coordinate (4) **A1** cao
16	Reciprocal: $\left(\frac{27y^6}{64x^9}\right)^{\frac{2}{3}}$	$\frac{9y^4}{16x^6}$	3	**M1** for dealing with negative index (flipping fraction)

Q	Working	Answer	Mark	Notes
	Cube root: $\frac{3y^2}{4x^3}$ Square result			**M1** for dealing with cube root or square correctly **A1** cao
17	$(2n-1)^2 + (2n+1)^2$ $= 4n^2 - 4n + 1 + 4n^2 + 4n + 1$ $= 8n^2 + 2$ $= 8(n^2) + 2$	Valid proof	4	**M1** for setting up $(2n-1)^2$ and $(2n+1)^2$ **M1** for correct expansion of both brackets **M1** for simplifying to $8n^2 + 2$ **A1** for concluding statement referencing multiple of 8
18	$5(x+5) = x(x+7)$ $x^2 + 2x - 25 = 0$ $x = \frac{-2 \pm \sqrt{4 - 4(-25)}}{2}$	4.10	4	**M1** for setting up correct intersecting secants equation **M1** for expanding and rearranging to 3-term quadratic **M1** for substituting into quadratic formula **A1** for 4.10
19	Freqs = 10,40,75,60. Total = 185 25 to 50 = $(5 \times 2) + (15 \times 5) + (5 \times 4) = 105$	$\frac{21}{37}$	4	**M1** for finding total frequency (185)

Q	Working	Answer	Mark	Notes
	$P = \frac{105}{185}$			**M1** for finding frequencies of sub-intervals for 25 to 50 **M1** for 105 **A1** for $21/37$ oe
20	ASF = $\frac{80\pi}{45\pi} = \frac{16}{9}$ LSF = $\sqrt{\frac{16}{9}} = \frac{4}{3}$ VSF = $\left(\frac{4}{3}\right)^3 = \frac{64}{27}$ Vol B = $810 \times \frac{64}{27}$	1920	4	**M1** for Area Scale Factor **M1** for finding Linear Scale Factor **M1** for finding Volume Scale Factor **A1** cao
21	(a) $2(x^2 - 6x) + 23$ $2[(x-3)^2 - 9] + 23$ $2(x-3)^2 - 18 + 23$	$2(x-3)^2 + 5$	3	**M1** for factorising 2 out of x terms **M1** for completing square inside bracket **A1** cao
	(b) Directly from form	(3,5)	1	**B1** cao
22	Gradient of radius = $\frac{-7}{4}$ Gradient of tangent = $\frac{4}{7}$ $y + 7 = \frac{4}{7}(x - 4)$	$4x - 7y - 65 = 0$	4	**M1** for gradient of radius **M1** for perpendicular gradient

Q	Working	Answer	Mark	Notes
	$7y + 49 = 4x - 16$			**M1** for substituting $(4, -7)$ into straight line equation **A1** cao in required format
23	$v = 3t^2 - 24t + 45$ $v = 0 \Longrightarrow 3(t-3)(t-5) = 0 \Longrightarrow t = 3, t = 5$ $s(0) = 0, s(3) = 54, s(5) = 50, s(7) = 70$ Distances = $54 + 4 + 20$	78	5	**M1** for differentiating to find velocity **M1** for setting $v = 0$ to find turning points at $t = 3$ and $t = 5$ **M1** for substituting 3, 5, and 7 into displacement formula **M1** for finding absolute distances between directional changes **A1** cao