

1MA1 Practice Tests Set 1: Paper 3H (Regular) mark scheme – Version 1.0					
Question		Working	Answer	Mark	Notes
1		Angle $BAC = 76^\circ$ Angle $BAP =$ $180^\circ - 90^\circ - 54^\circ = 36^\circ$ $x = 76^\circ - 36^\circ$	40°	4	
		OR Angle $QCD = 54^\circ$ Angle $ACP =$ $180^\circ - 76^\circ - 54^\circ = 50^\circ$ $x = 180^\circ - 90^\circ - 50^\circ$			

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Question		Working	Answer	Mark	Notes
2		25 50 75 100 125 150 175 35 70 105 140 175	10·96	5	

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Question		Working	Answer	Mark	Notes
3	(a)		$\frac{5}{14}$	1	
			54	3	
	(b) (c)		e.g. 6 green	3	
4		$\frac{48.45}{425} \times 100$ OR $\frac{11}{100} \times 425 = 46.75$	Katie spends more	3	

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Question		Working	Answer	Mark	Notes
5		Jan x Feb $2x$ Mar $2x + 10$ Apr $\frac{1}{2}(2x + 10)$ $x + 2x + 2x + 10 + \frac{1}{2}(2x + 10) > 123$ $6x + 15 \geq 123$	18	5	

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Question		Working	Answer	Mark	Notes
6		$\frac{\frac{1}{2} \times \pi \times 10^2 - \pi \times 5^2}{2} =$ 12.5π	39.3	5	

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Question		Working	Answer	Mark	Notes
7			explanation	1	
8	(a)	5000×1.028^4	5583.96	3	
	(b)	$12000 \times 1.02 \times 1.035 \times 1.05$	£13301.82	2	

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Question		Working	Answer	Mark	Notes
9	(a)	$(3x + 2)(2x + 1) = 100$ $6x^2 + 4x + 3x + 2 = 100$	$6x^2 + 7x - 98 = 0$	2	
	(b)	$(3x + 14)(2x - 7) (= 0)$ $x = 3.5$ (Area =) $6 \times "3.5"'^2$ or $(3 \times "3.5") \times (2 \times "3.5")$	73.5	5	

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Question		Working	Answer	Mark	Notes
10	(a)		3, – 6, – 5	2	
	(b)		Quadratic graph	2	
	(c)	Draw $y = -3$	0.3, 3.7	2	
11		$132.88 \div 88100$	151	3	

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Question		Working	Answer	Mark	Notes
12		$DC^2 = 5^2 + 8^2;$ $DC = \sqrt{89}$ $DB^2 = 5^2 + 10^2;$ $DB = \sqrt{125}$ $BC^2 = 8^2 + 10^2;$ $BC = \sqrt{164}$ $\cos CDB = \frac{89 + 125 - 164}{2 \times \sqrt{89} \times \sqrt{125}}$ $= 0.23702$	76.3	6	

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Question		Working	Answer	Mark	Notes
13		$4(x + 4) = 4x + 16$ $4(3x + 4) = 12x + 16$ $4x + 16 = \frac{2}{3}(12x + 16)$ $12x + 48 = 24x + 32$ $12x = 16$	$5\frac{1}{3}$	5	

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Question		Working	Answer	Mark	Notes
14		$\frac{12}{20} \times \frac{11}{19} + \frac{5}{20} \times \frac{4}{19} + \frac{3}{20} \times \frac{2}{19}$	$\frac{222}{380}$	4	
		$1 - \left(\frac{12}{20} \times \frac{11}{19} + \frac{5}{20} \times \frac{4}{19} + \frac{3}{20} \times \frac{2}{19} \right)$			

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Question		Working	Answer	Mark	Notes
14 (cont)					

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Question		Working	Answer	Mark	Notes
15		$\frac{1}{2} \times x^2 \times \sin 60 = 36$ $x^2 = \frac{72}{\sin 60} = 83.13..$	9.12	3	
*16		$(2n + 1)(2m + 1)$ $= 4nm + 2n + 2m + 1$ $= 2(2nm + n + m) + 1$	Proof	3	

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Question		Working	Answer	Mark	Notes
17	(b)	$20 + 15 + 7.5 + 3.5 + 1$	46 - 48	3	
			overestimate with reason	1	
18		$15 \div 70 = 120 \div n$ $120 \times 4.66(\dots)$ OR $\frac{120 \times 70}{15}$ OR 8×70 OR $\frac{15}{70} \times 8/8 = \frac{120}{n}$ OR $120 \div 21.4 \times 100$	560	4	

National performance data from Results Plus

Source of questions						Mean score of students achieving grade:								
Qu	Spec	Paper	Session	Qu	Topic	Max score	Mean % all	ALL	A*	A	B	C	D	E
1	5MM2	2F	1306	Q23	Angles	4	15	0.60				1.87	0.65	0.23
2	5AM1	1H	1111	Q16	Money calculations	5	76	3.80	5.00	4.43	4.23	3.18	2.57	1.00
3	5MM2	2H	1311	Q12	Probability	7	74	5.21	6.57	6.35	5.85	4.96	2.53	0.95
4	5AM1	1H	1111	Q07	Percentages	3	67	2.02	3.00	3.00	2.20	1.27	0.43	0.00
5	5AM2	2H	1411	Q12	Solve inequalities	5	66	3.30	5.00	4.50	4.25	2.71	1.79	0.00
6	5MM2	2H	1111	Q12	Area of a circle	5	61	3.06	4.88	4.64	3.96	2.07	0.60	0.33
7				NEW	Solving linear equations	1					No data available			
8a	5AM1	1H	1206	Q16a	Compound interest	3	71	2.13	2.96	2.82	2.35	1.36	0.59	0.00
8b	5AM1	1H	1206	Q16bi	Compound interest	2					No data available			
9	4MA0	2H	1401	Q18	Solve quadratic equations	7	49	3.46	6.31	4.20	2.00	0.45	0.14	0.00
10	2540	2F	811	Q28	Graphs of quadratic equations	6	20	1.18				2.47	1.16	0.41
11	1380	2H	911	Q21	Reverse percentages	3	29	0.88	2.79	1.99	1.00	0.29	0.07	0.02
12	1387	6H	711	Q25	Pythagoras in 3D	6	28	1.65	4.35	2.12	0.79	0.16		
13	5AM1	1H	1111	Q14	Solve linear equations	5	25	1.25	4.83	1.43	0.70	0.36	0.57	1.00
14	1MA0	2H	1206	Q25	Ratio	4	24	0.96	3.52	2.34	0.86	0.16	0.02	0.00
15	1387	6H	711	Q21	Trigonometry	3	22	0.65	2.15	0.75	0.16	0.03		
16	5MM2	2H	1306	Q23	Algebraic proof	3	15	0.44	1.67	0.64	0.23	0.04	0.01	0.00
17	5AM2	2H	1506	Q20	Area under a graph	4	41	1.23	2.60	1.97	1.03	0.34	0.11	0.00
18	2MB01	1H	1111	Q14	Estimating populations	4	15	0.58			No other data available			
						80								