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Mark Scheme (Results)

January 2013

International GCSE Specification A (4MA0) Paper 1F

Level 1 / Level 2 Certificate in Mathematics (KMA0) Paper 1F

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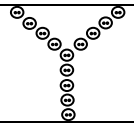
Question	Working	Answer	Mark	Notes
1. (a)		K2	1	B1 accept 8611
(b)	Six thousand, one hundred and ninety four		1	B1 accept mis-spellings if meaning is clear
(c)		5900	1	B1
(d)		5895	1	B1 accept Kilimanjaro
(e)		1085	1	B1
				Total 5 marks

2. (a)		5	1	B1
(b)		26 to 28 inclusive	1	B1 accept decimal values between 26 and 28
(c) (i)		Middle East	1	B1
(c) (ii)		2/25	2	B2 B1 for 8/100 or 4/50
(d)		Bar drawn >30 and < 35	1	B1 Bar drawn between (not touching) heights 30 and 35
				Total 6 marks

3. (a)		3/100	1	B1 accept 100^{ths}, hundredths, 1/100 (0).03, (0).01, {leading zeros not necessary}
(b)		7	1	B1 accept 7.0, 7.00, 7.000 etc
(c)		(0).75	1	B1 leading zero not necessary
(d)		0.07, 0.14, 0.306, 0.35, 0.4	1	B1 leading zeros not necessary
(e)		31/100	1	B1
				Total 5marks

4. (i)		5 (+) 7 (x) 8 or 5 (+) 8 (x) 7	1	B1 Accept either answer
(ii)		2 (-) 6 (÷) 3 or 3 (-) 6 (÷) 2	1	B1 Accept either answer
				Total 2 marks

5. (a)			1	B1	4 circles on each arm + 1 circle in middle. Accept circles with or without dots.
(b)	3 x 8 + 1	25	2	M1 A1	
(c)	(55 – 1) ÷ 3 or 55 = 3 "*x*" + 1 or 3 x 18 + 1	18	2	M1 A1	brackets not necessary sc B1 for awrt 54.7
					Total 5 marks

6. (a)		Trapezium	1	B1	(any recognisable spelling) accept trapezoid
(b)		D and F or F and D	1	B1	
(c)			1	B1	angle marked in correct place in A or C or E and no errors (can be an arc with no label)
(d)		4	1	B1	
(e)		10	2	B2	B1 for 8=< area <10 or 10 <area =<12 or 5x2
					Total 6 marks

7. (a) (i)		32°	1	B1	
7. (a) (ii)	(vertically) opposite angles (are equal)		1	B1	must have "opposite angles" or "vertically opposite" as minimum (accept abbreviations if meaning is clear). Do not accept amalgamations ("corresponding vertically opposite angles")
7. (b) (i)		45°	1	B1	
7. (b) (ii)	(sum of) angles at a point = 360°		1	B1	a full turn / circle = 360° must mention 360 Ignore calculations if on their own Do not accept "angles add up to 360°"
7. (c)	(180 – 32) ÷ 2	74	2	M1 A1	"148" ÷ 2 N.B. 164 (implied from 180 – 16) on answer line with no working = M1A0
					Total 6 marks

8. (a)	43 – 15	28	2	M1 or 43 and 15 isolated A1
8. (b)	original 10 numbers in correct order (ascending or descending order and can be seen in any part of the question)	32	2	M1 or 30 and 34 isolated A1
8. (c) (i)		Stay the same	1	B1
8. (c) (ii)	middle two numbers are the same / order is the same / 18 is the smallest number / correct new order stated		1	B1 dependent on ci correct
				Total 6 marks

9. (a)		– 4	1	B1
9. (b)		1296	1	B1
9. (c)		31	1	B1
9. (d)		7	1	B1
				Total 4 marks

10. (a)	$6x = 20 – 5$ or $6x = 15$ or $(20 – 5) \div 6$	2.5 oe	2	M1 Brackets not necessary A1 Correct answer with no working = M1A1 sc M1 A0 for 19.16 or better.
10. (b)	$8y – 20 = 30$ or $2y – 5 = 30 \div 4$ $8y = 20 + 30$ or $2y = (30 \div 4) + 5$	6.25 oe	3	M1 M1 for $8y – 20$ M1 A1 dep on M1 awarded otherwise M0A0
				Total 5marks

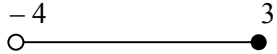
11. (a)	600 x 9.54	5724	2	M1 A1
11. (b)	3 hrs 30 mins (+) 8hrs 15 mins or 3.5 (+) 8.25 or 3.30 (+) 8.15 11 (hrs) or 45 mins	11 (hrs) 45(mins)	3	M1 both values correctly stated in hours and mins Do not accept 3.30 hrs (+) 8.15 hrs B1 hrs or mins correct A1 Fully correct answer = M1B1A1
11. (c)	1470 ÷ 9.8	150	2	M1 A1
				Total 7 marks
12. (a)	3 x 2 + 4 x 6	30	2	M1 M1 for 3 x 2 and 4 x 6 or 6 and 24 A1
12. (b) (i)		$7mn$ (oe)	1	B1 no x signs
12. (b) (ii)		$6y^4$	1	B1
12. (b) (iii)		$9g - 6h$	2	B2 fully correct final answer. B1 for $9g$ or $-6h$
12. (c)		$6t - 12$	1	B1 accept 6 x t for 6t
				Total 7 marks

13. (a)	1 – (0.18 + 0.2 + 0.23 + 0.22)	0.17	2	M1 1 – 0.83 A1
13. (b)	40 x 0.2	8	2	M1 A1 8 out of 40 = M1A1 8/40 = M1A0
				Total 4 marks

14. (a)	45/625 x 100	7.2	2	M1 A1
14. (b)	8/100 x 45 (= 3.6) 45 + "3.6"	48.6(0)	3	M1 or M2 for 45 x 1.08 M1 dep A1
14. (c)	640 – 625 (= 15) "15" / 625 or "15" / 640	2.4	3	M1 640/625 (= 1.024) 625/640 (= 0.976.. or 0.977) M1 dep "1.024" – 1 (= 0.024) 1 – "0.976" (= 0.0234) A1
14. (d)	18 ÷ 1 1/3 or 18 ÷ 1.33 (2dp or better) or 18 ÷ 80 x 60	13.5	3	M2 M1 for 1 1/3 or 18 ÷1.2 (=15) or 18 ÷ 1.3 (13.8..) or 18 ÷ 80 (=0.225) A1 cao
				Total 11 marks

15. (a)		**Q** correct	3	B3 Bottom LH corner goes to (4, –2) If not B3 then B2 for correct size T shape in wrong position but with correct orientation If not B2 then B1 for T shape with 2 or more sides of correct length and correct orientation
15. (b)		**R** correct	2	B2 Bottom LH corner goes to (–11,3) If not B2 then B1 for rotation of ± 90° (wrong position)
				Total 5 marks
16.	$2y = 6$ or $4x = -6$ oe	$x = -1.5$ $y = 3$	3	M1 Adding or subtracting correctly or correct substitution leading to one correct equation and one unknown A1 A1 dep on M1 awarded otherwise M0A0
				Total 3 marks

17. (a)		$25 < d \leq 30$	1	B1 identifies 25 →30 class
17. (b)	(12 x 2.5) + (6 x 7.5) + (4 x 12.5) + (6 x 17.5) + (14 x 22.5) + (18 x 27.5) (totals: 30, 45, 50, 105, 315, 495)	1040	3	M2 do not have to see intention to add If not M2 then M1 for freq x consistent interval value (890 = freq x lower limit, 1190 = freq x upper limit) or 3 or more correct products stated or evaluated A1 isw if 1040 calculated correctly and correct mean calculation follows (1040 ÷ 60 = 17.3 or better)
				Total 4 marks

18. (i)	$-2 - 2 < x$ and $x \leq 5 - 2$	$-4 < x \leq 3$	2	M1 condone omission/addition of "equals" in inequalities A1cao accept $x > -4$ and $x \leq 3$ (both present)
18. (ii)			2	B2 ft ft for an inequality where range lies between – 5 and +5 If not B2ft then B1ft for correct values but wrong shading of end circles
				Total 4 marks

19. (a)	7.9 x cos 38° or 7.9 x sin 52°	6.23	3	M2 M1 for cos 38° or sin 52° selected A1 6.2252… awrt 6.23
19. (b) (i)		37.5	1	B1
19. (b) (ii)		38.5 or 38.49 rec	1	B1
				Total 5 marks

				TOTAL: 100 marks

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