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Mark Scheme (Results)
November 2009

IGCSE

IGCSE Mathematics (4400)
Paper 2F Foundation Tier

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November 2009 IGCSE Mathematics (4400) Mark Scheme – Paper 2F

In all questions, the correct answer, unless clearly obtained by a clearly incorrect method, should be taken to imply a correct method.

Q	Working	Answer	Mark	Notes
1. (a)		Nile	1	B1 cao
(b)		four thousand and twenty three	1	B1 Accept 4 for four and 3 for three
(c)		hundreds	1	B1 Accept 300, 100
(d)		4000	1	B1 cao
(e)		4700	1	B1 cao
(f)		303	1	B1 cao
(g)(i)		0.4	2	B1 Accept 0.40 etc
(ii)		40		B1 ft from (i)
				Total 8 marks

2. (a)		361-379	1	B1
(b)(i)		180 shown	2	B1 Allow ½ division
(ii)		0.18(0)		B1
(c)		2500	1	B1 cao
				Total 4 marks

3. (a)(i)		Impossible	3	B1
(ii)		Certain		B1
(iii)		Unlikely		B1
(b)(i)		X at 0.5	2	B1 Condone omission of label
(ii)		X between 0.25 and 0.5		B1
				Total 5 marks

Q		Working	Answer	Mark	Notes	
4.	(a)			1	B1	
	(b)		13 16 19	2	B2	B1 for 13 correct
	(c)	eg 19 + 3 × 6, repeated addition of 3		2	M1	
			37		A1	cao
	(d)(i)		58	2	B1	cao
	(ii)	eg take away 3, add 3, use of $3n + 1$			B1	
						Total 7 marks

5.	(a)		−5	1	B1	Accept eg minus 5
	(b)	eg −1 − (−4)		2	M1	
			3		A1	Accept +3
	(c)	3 − (−5)		2	M1	Accept eg −5 to 3, −5 −3. −8, −5 and 3 identified, ordered list
			8		A1	cao
						Total 5 marks

6.	(a)		7.3	1	B1	Accept 7.1-7.5 inc
	(b)		74	1	B1	Accept 72-76 inc
	(c)	$\angle BAD = 117^\circ$		3	M1	Allow ±2°
		Arc centre C radius 9.1 cm or CD = 9.1cm ± 2mm			M1	Allow ±2 mm
			ABCD completed		A1	Within tolerance
						Total 5 marks

Q		Working	Answer	Mark	Notes
7.	(a)		$\frac{4}{5}$	1	B1 cao
	(b)	42 ÷ 7 or 6 or 3 × 42 or 126		2	M1 Also award for 0.428… × 42 with decimal rounded or truncated to at least 2dp
			18		A1 cao
	(c)	0.833… 0.875 0.84 0.8		2	M1 for 2 fractions converted to decimals, rounded or truncated
			$\frac{4}{5}$ $\frac{5}{6}$ $\frac{21}{25}$ $\frac{7}{8}$		A1 SC if M0, award B1 for 3 fractions in correct order
					Total 5 marks

8.	(a)(i)		289	2	B1 cao
	(ii)	eg sum of angles at a point = 360°, 360° in a circle, 360° in a full turn			B1
	(b)	eg vertically opposite angles		1	B1 Award if 'opposite' appears
	(c)(i)		95	2	B1 cao
	(ii)	eg sum of angles on a straight line = 180°			B1 Award if 'line' and '180°' appear If answer to (c) is 95, accept 'sum of angles at a point = 360°' oe
					Total 5 marks

9.	$\frac{20}{48}\times 360 = 150^\circ$, $\frac{18}{48}\times 360 = 135^\circ$, $\frac{10}{48}\times 360 = 75^\circ$		3	M1 for evidence of a correct method eg one sector correct or one angle correctly stated
		pie chart		A1 for all angles correctly drawn ± 2° A1 for 3 labels (not just angles) dep on at least one correct sector
				Total 3 marks

Q		Working	Answer	Mark	Notes
10.	(a)		68	1	B1 cao
	(b)	$\frac{360-2\times"68"}{2}$ or 180 – "68"		2	M1
			112		A1 cao
					Total 3 marks

11.	(a)	86 × 72.5		2	M1
			6235		A1 cao
	(b)	8700 ÷ 72.5		2	M1
			120		A1 cao
					Total 4 marks

12.	(a)		1 4 10 13	2	B2 B1 for 2 or 3 correct
	(b)		Points correct	2	B1 Allow $\pm$ ½ sq Condone 1 plotting error ft from (a) if at least B1 scored
			Correct line		B1 for single straight line at least from (−2, −2) to (3,13)
					Total 4 marks

13.	(a)	24 : 60		2	M1 for 24:60 or for ratio equivalent to 24:60 not in simplest form	SC If M0, award B1 for 5 : 2
			2 : 5		A1 cao	
	(b)	1 + 9 + 2 or 12 or 5 seen		3	M1 May be implied by 1 correct answer	
			5 10 45		A2 A1 for one correct	
					Total 5 marks	

Q	Working	Answer	Mark	Notes
14.	$\frac{350.26}{0.3}$		2	M1 for 350.26
		1167.5333		A1 Accept 1dp or better Also accept 1167.53$\dot{3}$ or $\frac{17513}{15}$
				Total 2 marks

15.	(a)(i)		62	2	B1 cao
	(ii)	eg alternate angles			B1 Accept 'alternate' but not 'Z angles'
	(b)	$\frac{180-"62"}{2}$ or $\frac{180-62}{2}$ or 59		2	M1
			121		A1 cao
					Total 4 marks

16.	(a)	1 − (0.4 + 0.5)		2	M1
			0.1		A1 Also accept $\frac{0.1}{1}$
	(b)	0.4 × 80 or $\frac{n}{80}=0.4$		2	M1
			32		A1 cao
					Total 4 marks

17.	(a)	$\frac{161}{3500}\times 100$		2	M1 for $\frac{161}{3500}$ oe inc 0.046
			4.6		A1 cao
	(b)	1% = \$$\frac{338}{5.2}$ or 65 seen or 5.2% (of amount) = 338		3	M1 M2 for $\frac{338}{5.2}\times 100$ or $\frac{338}{0.052}$
		"65" × 100			M1
			6500		A1
					Total 5 marks

Q		Working	Answer	Mark	Notes		
18.	(a)		Reflection in the line $y = 4$	2	B2	B1 for reflection, reflect etc B1 for $y = 4$ or eg 'dotted line' but, if given, equation must be correct	These marks are independent but award no marks if answer is not a single transformation. (Second transformation may be implied)
	(b)		Enlargement with scale factor 1½, centre (1,6)	3	B3	B1 for enlargement, enlarge etc B1 for 1½ oe B1 for (1,6)	
							Total 5 marks

19.	(a)		d^5	1	B1	cao
	(b)		$8x - 3y + 2$	2	B2	B1 for two terms correct
	(c)		$n(n - 4)$	2	B2	B1 for factors which, when expanded and simplified, give two terms, one of which is correct except $(n + 2)(n - 2)$ and similar SC B1 for $n(n - 4n)$
						Total 5 marks

20.	Arcs of equal radii > ½*AB*, centres *A*, *B*, which intersect twice	2	M1	
	Perpendicular bisector within guidelines		A1	
				Total 2 marks

21.	$5 \times 23 + 15 \times 3 + 25 \times 2 + 35 \times 3$ $= 115 + 45 + 50 + 105$		3	M1	for finding at least 3 products $x \times f$ consistently within intervals (inc end points)
				M1	(dep) for use of at least 3 correct halfway values
		315		A1	cao isw after 315
					Total 3 marks

Q	Working	Answer	Mark	Notes
22.	$\frac{8.6\times(1+0.2)}{(1-0.2)}$ or $\frac{10.32}{0.8}$		2	M1 for correct substitution
		12.9 oe		A1
				Total 2 marks

23. (a)		Correct line	2	B2 Must be a single straight line passing through at least 3 of (0, −2), (3, 0), (6, 2), (9, 4) B1 for a single straight line with a positive gradient passing through either (0, −2) or (3, 0) or for 3 of 4 points (0, −2), (3, 0), (6, 2), (9, 4) correct with at most 1 point incorrect Allow ± 2mm
(b)	Lines $x = 3$ and $x = 6$ drawn		3	B1
	Lines $y = 2$ and $y = 4$ drawn			B1
		R shown		B1 Condone omission of label Accept shading in or shading out, if consistent Award 3 marks for correct labelled rectangle, even if not shaded Award 2 marks for a correct unshaded rectangle without a correct label **SC** B1 for region bounded by $2 \leq x \leq 4$ and $3 \leq y \leq 6$
				Total 5 marks

				TOTAL FOR PAPER: 100 MARKS

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