

# 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 $\frac{1}{2}$ 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 $19 + 3 \times 6$ , 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 $\pm 2^\circ$
	Arc centre $C$ radius 9.1 cm or $CD = 9.1\text{cm} \pm 2\text{mm}$			M1 Allow $\pm 2$ mm
	$ABCD$ completed			A1 Within tolerance
				Total 5 marks

Q	Working	Answer	Mark	Notes
7. (a)		$\frac{4}{5}$	1	B1 cao
(b)	$42 \div 7$ or $6$ or $3 \times 42$ or $126$		2	M1 Also award for $0.428... \times 42$ 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 = $360^\circ$ , $360^\circ$ in a circle, $360^\circ$ 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 = $180^\circ$			B1 Award if 'line' and ' $180^\circ$ ' appear If answer to (c) is 95, accept 'sum of angles at a point = $360^\circ$ ' 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 $\pm 2^\circ$ 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)	$86 \times 72.5$		2	M1
		6235		A1 cao
(b)	$8700 \div 72.5$		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 $\pm \frac{1}{2}$ 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 1167.5 $\dot{3}$ 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)	$0.4 \times 80$ 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" $\times 100$			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
(b)		Enlargement with scale factor $1\frac{1}{2}$ , centre (1,6)	3	B3 B1 for enlargement, enlarge etc B1 for $1\frac{1}{2}$ oe B1 for (1,6)
				Total 5 marks

19. (a)		$d^p$	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 $> \frac{1}{2}AB$ , 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 $\pm 2\text{mm}$
(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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