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Mark Scheme (Results)
November 2008

IGCSE

IGCSE Mathematics (4400) Paper 1F

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November 2008 IGCSE 4400 Maths Mark Scheme – Paper 1F

Q	Working	Answer	Mark	Notes
1. (a)		eight thousand and ninety one	**1**	B1 Accept 8 for eight and 1 for one
(b)		8090	**1**	B1 cao
(c)		thousand	**1**	B1 Accept 8000, 1000, th
(d)		8850	**1**	B1 cao
				Total 4 marks

2. (a)		Friday	**1**	B1	Accept any clear identification
(b)		20	**1**	B1	cao
(c)		23 or 24	**1**	B1	Accept 20 < answer < 25
(d)		Wednesday	**1**	B1	Accept any clear identification
(e)	20 : 30 or 4 to 6 oe		**2**	M1	
		2 : 3		A1	SC if M0, award B1 for 3 : 2
(f)		0.04	**1**	B1	cao
(g)	$\frac{4}{100}$		**2**	M1	for $\frac{4}{100}$ or $\frac{2}{50}$
		$\frac{1}{25}$		A1	cao
					Total 9 marks

Q	Working	Answer	Mark	Notes
3. (i)		8	**4**	B1 cao
(ii)		9		B1 cao
(iii)		6 or 8		B1
(iv)		7		B1 cao
				Total 4 marks

4. (a)		pentagon	**1**	B1
(b)		correct pair	**1**	B1
(c)		correct line	**1**	B1
(d)		R correct	**1**	B1
(e)		17	**2**	B2 if not 17, B1 for $16 \leq$ ans ≤ 18
				Total 6 marks

5. (a)		43 51	**2**	B2 B1 for 43, B1 for 51
(b)		eg Add 8	**1**	B1
(c)		115	**1**	B1 cao
(d)	eg 724 is even, all terms are odd		**1**	B1
				Total 5 marks

Q	Working	Answer	Mark	Notes
6. (a)		2.9	**1**	B1 cao
(b)(i)		19.0969	**2**	B1 Accept 2 or more dp rounded or truncated
(ii)		19.1		B1 ft from (i) if 2 or more dp
(c)		17.576	**1**	B1 Accept 1 or 2 dp rounded or truncated
				Total 4 marks

7. (a)(i)		111-115 inc	**3**	B1
(ii)		66-70 inc		B1
(iii)		42		B1
(b)	eg 50 50 20, 3×40, 3×"150", 4×"115", 6×"75", 120×5, 190÷50		**2**	M1 Attempts to split 120 into numbers $\leq$ 50 (may be implied by working) or attempts to find conversion rate etc
		440-600 inc		A1 Do not award if there is a clear error in the working (tolerance is ± ½ sq)
				Total 5 marks

Q	Working	Answer	Mark	Notes
8. (a)(i)		156	**2**	B1 cao
(ii)	eg Sum of angles at a point = 360° A full circle is 360°. A full turn is 360°.			B1 Do not award for statement that the sum of the angles is 360° or for a calculation.
(b)		62	**1**	B1 cao
(c)(i)		118	**2**	B1 cao
(ii)	eg sum of angles on a straight line = 180°			B1 for 'line' and '180°' seen or, if (c)(i) is correct, for either 'opposite' or 'sum of angles at a point = 360°' oe
				Total 5 marks

9. (a)(i)		$\frac{1}{10}$	**2**	B1 Accept 0.1 or 10%
(ii)		0		B1 Accept $\frac{0}{10}$
(b)		$\frac{3}{5}$ or $\frac{6}{10}$	**1**	B1 Accept 0.6 or 60%
(c)	eg $\frac{2}{5} \times 10$, $\frac{4}{10}$ seen		**2**	M1
		4		A1
				Total 5 marks

Q	Working	Answer	Mark	Notes
10.	eg 0.45 0.428… 0.444… 0.43		**3**	B3 B2 for 3 numbers in correct order or for 2 fractions correctly converted to decimals (at least 2dp rounded or truncated) B1 for 1 fraction correctly converted to a decimal (at least 2dp rounded or truncated)
		$\frac{3}{7}$ 0.43 $\frac{4}{9}$ $\frac{9}{20}$		
				Total 3 marks

11.	$\frac{16.8}{4.2}$ or 4		**4**	M1
	$\frac{14.4}{4}$ or 3.6			A1
	4.2 × "3.6"			M1
		15.12		A1 Accept 15.1
				Total 4 marks

Q	Working	Answer	Mark	Notes
12. (a)		$4n^2$	**1**	B1 Accept $4 \times n^2$, $n^2 4$ etc.
(b)	$3 \times 4 - (2 \times -5) = 12 + 10$		**2**	M1 for substitution (condone omission of brackets) or for 12 or +10
		22		A1 cao
(c)	$4x = 11 - 5$ or $4x = 6$		**2**	M1
		$1\frac{1}{2}$ oe		A1
				Total 5 marks

Q	Working	Answer	Mark	Notes
13. (a)	$\frac{50}{2}$ or 25 or $\frac{51}{2}$ or 25½ or list of all scores		**2**	M1
		4		A1 cao
(b)	1×10+2×9+3×3+4×17+5×11 or 10+18+9+68+55 or 160		**3**	M1 for at least 3 correct products and summing them
	$\frac{"160"}{50}$			M1 (dep) for division by 50
		3.2		A1 Accept 3 if $\frac{160}{50}$ seen
(c)		$\frac{17}{50}$	**1**	B1 Accept 0.34 or 34%
(d)	'No' ticked and eg *The scores are not equally likely. 4 is most likely.*		**1**	B1
				Total 7 marks

14. (i)		060-064	**2**	B1 Condone omission of 0
(ii)		321-325		B1
				Total 2 marks

Q	Working	Answer	Mark	Notes
15. (a)	$\frac{35}{100}\times 180$ or 63		**3**	M1 M2 for $\frac{65}{100}\times 180$
	180 − "63"			M1 dep
		117		A1 cao
(b)	$\frac{84}{0.35}$ or $84\times\frac{100}{35}$		**3**	M2 for $\frac{84}{0.35}$ or $84\times\frac{100}{35}$ M1 for $\frac{84}{35}$ or 2.4
		240		A1
				Total 6 marks

16. (a)			$7(p-3)$	**1**	B1 cao	
(b)	$4x + 20$	or $x + 5 = 3$		**3**	M1 for $4x + 20$ seen	or M2 for $x + 5 = 3$
	$4x = 12 - 20$				M1 for $4x = 12 - 20$ or for $4x = 12 - 5$ following $4x + 5 = 12$	
			−2		A1	
						Total 4 marks

Q	Working	Answer	Mark	Notes		
17. (a)		translation	**2**	B1	Accept translated, translate etc	These marks are independent but award no marks if the answer is not a single transformation
	7 to the left and 1 down or $\begin{pmatrix} -7 \\ -1 \end{pmatrix}$			B1		
(b)		rotation	**3**	B1	Accept rotated, rotate etc	
		90°		B1	Accept quarter turn Accept 270°clockwise	
		(0, 0)		B1	Accept origin, *O*	
						Total 5 marks

18.	$\frac{11.7}{6.5}$		**2**	M1	for 11.7 or 6.5
		1.8		A1	Accept $\frac{9}{5}$ etc
					Total 2 marks

Q	Working	Answer	Mark	Notes
19.	$\pi \times r^2 \times 7.6$		**3**	M2 if $r = \frac{4.3}{2}$ or 2.15 (M1 if r = 4.3 may be implied by answer rounding to 441)
		110		A1 for answer rounding to 110 ($\pi \rightarrow 110.367 \ldots$ $3.14 \rightarrow 110.311 \ldots$)
				Total 3 marks

20.	$\frac{2}{5} \times \frac{7}{4}$ or $\frac{14}{35} \div \frac{20}{35}$		**3**	B2 for $\frac{2}{5} \times \frac{7}{4}$ (B1 for inverting second fraction ie $\frac{7}{4}$) or B1 for 2 fractions with a denominator of 35 etc B1 for correct numerators
	$\frac{14}{20}$			B1 eg for $\frac{14}{20}$ oe or correct cancelling
				Total 3 marks

Q	Working	Answer	Mark	Notes
21. (a)(i)		p^6	**2**	B1 cao
(ii)		q^5		B1 cao
(b)	$12x - 3 - 8x + 12$		**2**	M1 for 3 correct terms
		$4x + 9$		A1 cao
(c)	$y^2 + 5y + 3y + 15$		**2**	M1 for 3 correct terms or $y^2 + 8y + c$ or … + 8y + 15
		$y^2 + 8y + 15$		A1 cao
				Total 6 marks

Q	Working	Answer	Mark	Notes		
22.	$\cos x° = \frac{5.4}{8.7}$ or 0.6206…		**3**	M1 A1	for cos for $\frac{5.4}{8.7}$ or 0.6206…	or M1 for sin and $\frac{\sqrt{"46.53"}}{8.7}$ following correct Pythagoras and A1 for value which rounds to 0.78 or M1 for tan and $\frac{\sqrt{"46.53"}}{5.4}$ following correct Pythagoras and A1 for value which rounds to 1.26
		51.6		A1	for answer rounding to 51.6	
					Total 3 marks	