

# Mark Scheme (Results) Summer 2008

IGCSE


## IGCSE Mathematics (4400) Paper 1F

Summer 2008 IGCSE Maths Mark Scheme - Paper 1F

Q	Working	Answer	Mark	Notes
1. (a)		7006	1	B1 cao
(b)		9000	1	B1 cao
(c)		hundreds	1	B1 Accept 500, 100
(d)		326	1	B1 cao
				<b>Total 4 marks</b>

2. (a)(i)		cuboid	1	B1 Accept rectangular box
(ii)		prism	1	B1 Condone omission of 'pentagonal'
(iii)		cone	1	B1
(b)		8	1	B1 cao
				<b>Total 4 marks</b>

3. (a)		Egypt and Malaysia	1	B1
(b)(i)		20	3	B1 cao
(ii)	$\frac{20}{100}$			M1 for $\frac{20}{100}$
		$\frac{1}{5}$		A1 ft from "20"
(c)		14	1	B1 Accept 13 or 14
(d)(i)		Kenya	2	B1
(ii)		0.43		B1 cao
(e)(i)		35 <bar>40	2	B1
(ii)		61		B1 cao
				<b>Total 9 marks</b>

4. (a)			1	B1	
(b)	$10 \times 2 + 1$		2	M1	
		21		A1	cao
(c)	$\frac{37 - 1}{2}$		2	M1	
		18		A1	cao
(d)	eg 60 is even, number of sticks is always odd, first number is odd and 2 is added each time, multiplying by 2 and adding 1 will always give an odd number of sticks		1	B1	May refer to number sequence of stick pattern - need not do both
(e)		$n = 2p + 1$	3	B3	for $n = 2p + 1$ oe eg $n = p^2 + 1, 1 + p \times 2 = n$ B2 for $2p + 1$ oe B1 for $n =$ linear function of $p$ eg $n = p + 1$
					<b>Total 9 marks</b>

5. (a)	25 - 18		2	M1	for 25 - 18, 18-25, 18 to 25 etc
		7		A1	cao
(b)	18 19 21 22 23 24 24 25 or 22, 23 or $\frac{8}{2}$ or 4 or $\frac{9}{2}$ or $4\frac{1}{2}$		2	M1	Also award for 18 19 21 22 23 24 25 i.e. with one 24 omitted
		22.5		A1	cao
					<b>Total 4 marks</b>

6.	(a)		24	2	B2	B2 for 23-25 inc B1 for 22 or 26
	(b)	$6 \times 2 + (4.5 \pm 0.2) \times 2$ oe		2	M1	for $6 \times 2 + (4.5 \pm 0.2) \times 2$ oe
			20.6-21.4		A1	for 20.6-21.4 inc SC if M0, award B1 for 20
	(c)		0	1	B1	Accept 'none', 'zero'
	(d)		2	1	B1	cao
	(e)(i)		115° - 119°	2	B1	
	(ii)		obtuse		B1	
	(f)		4, 3	2	B2	B1 for 4 B1 for 3
<b>Total 10 marks</b>						

7.	(a)		$2p$	1	B1	Accept $p^2$ , $2 \times p$ etc
	(b)		$4xy$	1	B1	Accept $xy^4$ , $4 \times xy$ etc
	(c)		$9g - 5h$	2	B2	B1 for $9g$ B1 for $-5h$ or $+ - 5h$
<b>Total 4 marks</b>						

8.	(a)(i)		27	1	B1	cao
	(ii)		20	1	B1	cao
	(iii)		25	1	B1	cao
	(iv)		23	1	B1	cao
	(b)		$\frac{5}{9}$	2	M1	fraction with denominator of 9
					A1	numerator of 5
<b>Total 6 marks</b>						

9. (a)		$\frac{8}{18}, \frac{12}{27}$ etc	1	B1
(b)	65 ÷ 5 or 13 or 4 × 65 or 260		2	M1
		52		A1 cao
(c)	0.875 0.9 0.85 0.88		2	M1 2 fractions converted to decimals or percentages or fractions with the same denominator
		$\frac{17}{20} \frac{7}{8} \frac{22}{25} \frac{9}{10}$		A1 SC if M0, award B1 for 3 fractions in correct order
<b>Total 5 marks</b>				

10.	180 – 2 × 73 oe		3	M2 for 180 – 2 × 73 oe M1 for unmarked base angle identified as 73° or 146° seen
		34		A1 cao
<b>Total 3 marks</b>				

11. (a)(i)		6859	2	B1 cao
(ii)		6860		B1 cao
(b)	$\frac{17.28}{2.4}$		2	M1 for 17.28 or 2.4 or – 0.114... seen
		7.2		A1 for 7.2 oe inc $7\frac{1}{5}$ and $\frac{36}{5}$
<b>Total 4 marks</b>				

12.	2 arcs, radius 6 cm, centres A and B		2	M1
	triangle within guidelines			A1
<b>Total 2 marks</b>				

13. (a)	$\frac{4.8}{100} \times 23500$ or 1128		3	M1	or M2 for $23\,500 \times 1.048$ oe		
	23 500 + "1128"			M1 (dep)			
		24 628		A1	cao		
(b)	29 832 – 28 250 or 1582		3	M1	Also award for 15.82	or	
	$\frac{1582}{28250} \times 100$ or $\frac{1582}{29832} \times 100$			M1	for $\frac{1582}{28250}$ or $\frac{1582}{29832}$ or 0.056 or 0.053...	M1 for $\frac{29832}{28250}$ or 1.056 or 105.6 M1 for "1.056" – 1 or "105.6" – 100	or M1 for $\frac{28250}{29832}$ or 0.9469... or 94.69... M1 for 1 – "0.9469" or 100 – "94.69"
		5.6		A1	cao (Do <i>NOT</i> award for 5.3)		
<b>Total 6 marks</b>							

14.	$\frac{1-0.6}{2}$		2	M1	for $1 - 0.6$ or $0.4$ or $\frac{x}{2}$ where $0 < x < 1$	
		0.2 oe		A1	for 0.2 oe	
<b>Total 2 marks</b>						

15. (a)	Enlargement scale factor 2 centre (1, 3)	3	B3	B1 for enlargement, enlarge etc B1 for 2, × 2, two, $\frac{2}{1}$ , 1 : 2, 2 : 1 B1 for (1, 3) Condone omission of brackets but do not accept $\begin{pmatrix} 1 \\ 3 \end{pmatrix}$	These marks are independent but award no marks if answer is not a single transformation
(b)	Reflection in the line $y = x$	2	B2	B1 for reflection, reflect etc B1 for $y = x$ oe inc eg 'in line from (2,2) to (5,5)', 'in dotted line shown'	
					<b>Total 5 marks</b>

16.	3 + 1 or 4 seen		2	M1 for 3 + 1 or 4 seen	
		210		A1 for 210 cao	
					<b>Total 2 marks</b>

17. (a)(i)		1, 9, 17	2	B1	cao	Brackets not necessary
(ii)		1, 5, 9, 13, 17, 25, 33		B1	cao (B0 if 1 or 9 or 17 repeated)	
(b)		eg No members in common. The intersection is empty. None of the members of A & C are the same. They don't have the same numbers. No numbers are in both A and C.	1	B1		
						<b>Total 3 marks</b>

18. (a)	$\frac{8 \times 3}{2}$ oe		2	M1	for $\frac{8 \times 3}{2}$ oe	
		12		A1	cao	
(b)	$\tan x^\circ = \frac{3}{8} = 0.375$		3	M1 A1	for tan for $\frac{3}{8}$ or 0.375	or M1 for sin following correct Pythagoras and A1 for 0.3511... or M1 for cos following correct Pythagoras and A1 for 0.9363...
		20.6		A1	for 20.6 or better (Accept 20.55604... rounded or truncated to 4 sig figs or more )	
						<b>Total 5 marks</b>



19. (a)	$7x - 7 = 5 - 2x$ $7x + 2x = 5 + 7$ or $9x = 12$		3	M1 for $7x - 7$ seen M1 for $7x + 2x = 5 + 7$ or $9x = 12$ or for $7x + 2x = 5 + 1$ or $9x = 6$ following $7x - 1 = 5 - 2x$
		$1\frac{1}{3}$ oe		A1 for $1\frac{1}{3}$ oe inc $\frac{4}{3}, \frac{12}{9}, 1.\dot{3}, 1.33$
(b)(i)	$4x \leq 16$		4	M1 for $4x \leq 16$
		$x \leq 4$		A1 for $x \leq 4$
(ii)		1 2 3 4		B2 B1 for 3 correct and none wrong or for 4 correct and 1 wrong
				<b>Total 7 marks</b>

20. (i)		57.5	2	B1 Accept 57.49, 57.499, 57.4999 etc
(ii)		56.5		B1 cao
				<b>Total 2 marks</b>

21.	$55 \times 7 + 65 \times 21 + 75 \times 15 + 85 \times 14 + 95 \times 3$ or $385 + 1365 + 1125 + 1190 + 285$ or 4350		4	M1 for finding products $f \times x$ consistently within intervals (inc end points) and summing them M1 (dep) for use of halfway values (55, 65, ... ) or (55.5, 65.5, ...)
	$\frac{"4350"}{60}$			M1 for $\frac{"4350"}{60}$ (dep on 1st M1) for division by 60 or for $\frac{"4380"}{60}$ if 55.5, 65.5, ... used
		72.5		A1 for 72.5 Accept 73 if first two M marks awarded
				<b>Total 4 marks</b>