

# Mark Scheme (Results) Summer 2010

IGCSE

IGCSE Mathematics (4400)  
Paper 1F Foundation Tier

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## Summer 2010 IGCSE Mathematics (4400) Mark Scheme - Paper 1F

Apart from Question 14(c) (where the mark scheme states otherwise), the correct answer, unless clearly obtained by an incorrect method, should be taken to imply a correct method.

Q	Working	Answer	Mark	Notes
1. a		9624	1	B1 cao
b		eight thousand and nine	1	B1
c		hundreds	1	B1 Accept 400, 100
d		6700	1	B1 cao
e		5492	1	B1 cao
f		3275	1	B1 cao
g		8709	1	B1 cao
				Total 7 marks

2. a		22	1	B1 Accept $20 < \text{ans} < 25$
b		USA	1	B1
c		China	1	B1
d		$20 < \bar{\text{ans}} < 25$	1	B1
ei	$\frac{30}{150}$		3	M1 for $\frac{30}{150}$ or $\frac{15}{75}$ or $\frac{5}{25}$ or $\frac{3}{15}$
		$\frac{1}{5}$		A1 cao
ii		0.2		B1 Accept 0.20 etc ft from " $\frac{1}{5}$ " apart from $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$
				Total 7 marks

Q	Working	Answer	Mark	Notes
3. a		10 7	2	B2 B1 for 10 B1 for 7
b		eg subtract 3	1	B1
c		-5	1	B1 cao
d		-32	1	B1 cao
				Total 5 marks

4. a		Parallel lines marked	1	B1
b		Perpendicular lines marked	1	B1
c		$8 \leq \text{area} \leq 12$	2	B2 If not B2, B1 for answer in range 6-14 inc
				Total 4 marks

5. a		$3n$	1	B1 for $3n, n^3, 3 \times n$ etc
b		$5p$	1	B1 for $5p, p^5, 5 \times p$ etc
c		$8q$	1	B1 cao
				Total 3 marks

Q	Working	Answer	Mark	Notes
6. a		44	1	B1 cao
b	$\frac{56}{100} \times 725$		2	M1
		406		A1 cao
c	$725 \div 5$ (145) or $725 \times 3$ (2175)		2	M1 for $725 \div 5$ or $725 \times 3$
		435		A1 cao
				Total 5 marks

7. a		hexagon	1	B1
bi		acute	2	B1
ii		reflex		B1
c		3	1	B1 cao
d		3.4	1	B1 Accept 3.2 - 3.6 inc
e	$"3.4" \times 6$		2	M1
		20.4		A1 Accept 19.2 - 21.6 inc ft from "3.4"
				Total 7 marks

Q	Working	Answer	Mark	Notes
8. a		$\frac{1}{6}$	1	B1
b		0	1	B1 Accept $\frac{0}{6}$ or $\frac{0}{1}$
c		1	1	B1 Accept $\frac{6}{6}$ or $\frac{1}{1}$
d		$\frac{2}{6}$	2	M1 for fraction with denominator of 6  A1 for $\frac{2}{6}$ or $\frac{1}{3}$
e		$\frac{4}{6}$ or $\frac{2}{3}$		B1 for $\frac{4}{6}$ or $\frac{2}{3}$
				Total 6 marks

9. a		512	1	B1 cao
bi		81	2	B1 cao
ii		200		B1 cao
ci		12.24489796	2	B1 Accept if first 5 figures correct (rounded or truncated) Also accept $\frac{600}{49}$ , $12\frac{12}{49}$
ii		12.2		B1 ft from (i) if non-trivial ie (i) must have more than 3 s.f.
				Total 5 marks

Q	Working	Answer	Mark	Notes
10. a		-5 -3 1 3	2	B2 B1 for 3 correct
b		Points correct	2	M1 Allow $\pm \frac{1}{2}$ sq ft from (a) if at least B1 scored in (a)
		Correct line		A1 cao
				Total 4 marks

11. a	$45 \times 29$		2	M1
		1305		A1 cao
b	"1305" $\div$ 150 or 8.7		2	M1
		8		A1 ft from "1305" if M1 scored
c	$45 \times 29 \times 32$ or "1305" $\times$ 32		2	M1
		41 760		A1 ft from "1305" if M1 scored
d	$\pi \times 8^2$		2	M1
		201		A1 for ans rounding to 201 ( $\pi \rightarrow 201.061\dots$ 3.14 $\rightarrow$ 200.96)
				Total 8 marks

12. a	$\frac{15}{6}$ oe or $\frac{100}{6}$ oe inc value rounded or truncated to at least 1dp eg 16.6, 16.7		2	M1
		250		A1 cao
b	$\frac{900}{6}$ or $\frac{5}{6}$ oe inc value rounded or truncated to at least 2 dp eg 0.83		2	M1
		750		A1 cao
				Total 4 marks

Q	Working	Answer	Mark	Notes
13. ai		62	2	B1 cao
ii		alternate		B1 Accept 'opposite and corresponding' (need both) or 'opposite, angle sum of triangle = 180° and sum of angles on a straight line = 180°' (need all three)
bi		71	2	B1 cao
ii		corresponding		B1 Accept 'opposite and alternate' (need both) or 'opposite, angle sum of triangle = 180° and sum of angles on a straight line = 180°' (need all three)
				Total 4 marks

14. a		$5n + 30$	1	B1	
b		$y^6$	1	B1	cao
c	$4x - 8 = 3$		3	M1	for correct expansion of $4(x-2)$
	$4x = 8 + 3$ or $4x = 11$			M1	for $4x = 8 + 3$ or $4x = 11$ or for $4x = 3 + 2$ or $4x = 5$ following $4x - 2 = 3$
		$2\frac{3}{4}$ oe		A1	dep on 2 method marks
					Total 5 marks



Q	Working	Answer	Mark	Notes
15. a	$\frac{3}{10} \times \frac{5}{6}$		2	M1
		$\frac{15}{60}$ or $\frac{1}{4}$		A1 Accept $\frac{3}{12}$ , $\frac{5}{20}$
b		24	2	B2 B1 for multiple of 24
				Total 4 marks

16. a		$400 < V \leq 500$	1	B1 Accept 400-500
b	$50 \times 2 + 150 \times 4 + 250 \times 6 + 350 \times 18$ $+ 450 \times 44 + 550 \times 6$ $= 100+600+1500+6300+19\ 800+3300$ $= 31\ 600$		4	M1 for finding at least 4 products $m \times f$ consistently within intervals (inc end points)
	$31\ 600 \div 80$			M1 (dep) for use of at least 4 correct halfway values
		395		M1 (dep on 1st M1) for adding and $\div$ by 80
				A1
				Total 5 marks

17. i		8.25	2	B1 cao
ii		15		B1 cao
				Total 2 marks

Q	Working	Answer	Mark	Notes
18.	cos and 41 $6.8 \cos 41^\circ$		3	M1 or M1 for $6.8 \sin 41^\circ$ (4.461) and $6.8^2 - "4.461" ^2$ (26.337) M1 for $\sqrt{"26.337"}$ or M1 for correct statement of Sine Rule eg $\frac{6.8}{\sin 90^\circ} = \frac{x}{\sin 49^\circ}$ M1 for correct expression for x eg $x = \frac{6.8 \sin 49^\circ}{\sin 90^\circ}$
		5.13		A1 for ans rounding to 5.13 (5.132025...)
				Total 3 marks

19. a	reflection in the line $y = -x$		2	B2 B1 for reflection B1 for $y = -x$ oe (accept eg "in dotted line" or "in line through (-5,5) and (5, -5)")	These marks are independent but award no marks if the answer is not a single transformation
b	R correct Vertices are (2,-1)(3,-1)(3,-3)		2	B2 B1 for 2 vertices correct or for a translation of R or for a $90^\circ$ clockwise rotation of Q about (-1,1)	
				Total 4 marks	

Q	Working	Answer	Mark	Notes	
20. a		6	1	B1	cao
b		7	1	B1	cao
					Total 2 marks

21. a		$-4 \leq x < 3$	2	B2	Also accept ' $x < 3$ and $x \geq -4$ ' B1 for $-4 \leq x \leq 3$ , $-4 < x < 3$ , $-4 < x \leq 3$ , a double-ended inequality which is correct at one end (ignore the other end) Also award B1 for $x \geq -4$ , $x < 3$ , ' $x < 3$ or $x \geq -4$ '
bi	$2x > -8$		4	M1	for $2x > -8$ or $x + 4.5 > 0.5$
		$x > -4$		A1	for $x > -4$ as final answer
ii		-3 -2 -1		B2	B1 for 3 correct and 1 wrong or for 2 correct and none wrong
					Total 6 marks

Total 100 marks					
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