

June 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 103

SYLLABUS/COMPONENT: 0580/03, 0581/03

MATHEMATICS

Paper 3 (Core)



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FINAL MARK SCHEME

0580/3

June 2004

Question Number	Answer	Marks	Comments	Total
1 a i	51	1		
ii	49	2	M1 for clear evidence of ranking	
iii	46	2	M1 for total/10, allowing errors in addition	
b i	20 60 160 80 40 (360)	2	M1 for evidence of $\times 4$ oe seen or SC1 for 3 or 4 correct	
ii	correct pie chart ($\pm 2^\circ$) correct labels	2 L1	5 sectors only. Any order. Or SC1 for 3 or 4 correct or ft correct 4 or 5 correct or ft correct	
iii a	4/9 oe	1	allow (0).44..., 44'....%, but not 0.4	
iii b	1/3 oe	2	M1 for <i>their</i> $((D+E)/T)$ from <i>their</i> table. Can be implied. For both parts –1 once for incorrect notation eg 4 out of 9, 1:3, 4 in 9 etc 0.3 ww is zero	
				13 13
2 a	9	1		
b i	6	1		
ii	18	1√	ft for $3 \times$ <i>their</i> bi (not strict ft)	
c i	(0).6	2	M1 for 3×0.2	
ii	30	2√	M1 for <i>their</i> bii/ci (not strict ft) or $2 \times 3/0.2$	
d	(0).02	2	M1 for $2 \times 0.1 \times 0.1$ oe SC1 for <i>fig</i> 2	
e	4.8(0) 9(.00) 14.4(0) 2.1(0) 30.3(0)	4 1√	B1 for each ft from 4 total costs	
				14 14
3 a	7 8 4 –1	3	B2 for 3 correct or B1 for 2 correct	

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b	13 correct or ft correct points ($\pm 1/2$ a square) Correct curve cao	P3✓ C1	P2✓ for 11 or 12 correct or P1✓ for 7 to 10 correct reasonable parabola shape, no straight line segments, pointed maximum etc	
c	-2.7 to -2.9 2.7 to 2.9	1 1		
d	-1 5	1 1		
e	correct line drawn $-3 \leq x \leq 3$	2	M1 for incomplete line or freehand line or both their (in)correct points correctly plotted	
f	2	2	M1 for attempt at $\Delta y / \Delta x$ from their straight line graph	
g	-3 1	1 1	-1 if y values given as well	
				17 17
4 a	120	1		
b	70	2	M1 for $t+2t+75+75=360$ oe $3t$ and 210 implies M1	
c i	130 oe (eg $180-50$)	2	M1 for angle sum of triangle(=180) used	
ii	100 oe (eg $360-100-160$)	2	M1 for angle sum of quadrilateral(=360) used	
iii	$x=70$ and $y=30$	3	✓M1 for attempted elimination of one variable (be generous) A1 for each answer. no ft. correct answers reversed implies M1A1	
				10 10
5 a	(0).2	1		
b i	Tangent and radius mentioned	1	or described.	

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ii	8 cao	1		
iii	art 1.78	3	M1 for <i>(their)</i> $8^2 - 7.8^2$ oe M1(indep) for square root indicated or used 1.77 ww implies M2. 1.8 ww is zero	
iv	6.9 (2 sig figs only)	3√	ft for answer correct to 2 sig figs (not strict ft) ($3.9 \times \text{their biii}$) or M1 for $0.5 \times 7.8 \times \text{their biii}$ + A1 for answer to more than 2 sig figs	
				9
6 a i	translation cao 10 -2	B1 B1 B1	or translated -1 for incorrect notation or a description SC1 for both answers correct but inverted	
ii	rotation or turn centre the origin oe (+) 90 (anticlockwise)	M1 A1 A1	 allow quarter turn for M1A1	
b i	correct reflection drawn	2	SC1 for reflection in x -axis	
ii	correct enlargement drawn	2	SC1 for scale factor 2, wrong centre	
				10 19
7 a i	pentagon	1		
ii	540	2	M1 for 3×180 , or $5 \times 180 - 360$ or $(180 - 360/5) \times 5$ or 6×90	
iii	108 cao	1		
b i	110 or $x=70$ or $y=20$ completion	M1 A1	may be on diagram Beware of circular arguments	
ii	art 50.2	2	M1 for $\tan(^{-1})$ and 120/100	
iii	120(.2)	1√	ft for $70 + \text{their bii}$	

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iv	300	1√	ft for 180+ <i>their</i> biii –1 for answers reversed	
				10 10
8 a i	6 (±0.1)	1		
ii	10	2√	√SC1 for 10^n where n is an integer. (ft 60/ <i>their</i> ai)	
iii	73 to 76	1		
b	both lines drawn (±0.1 cm)	2	B1 for each line. Ignore any curves at ends, lines must be at least 5 cm long. Allow dotted etc	
c	mediator drawn (±0.1 cm and 1°) with two pairs of arcs	2	B1 for correct line with no arcs or correct arcs with no line	
d	complete circle, radius 4 (±0.1) cm drawn, centre C	2	SC1 for incomplete circle	
e	L marked correctly	1	be convinced	
				11
9 a i	12	1		
ii	20	1		
iii	$2n+2$ oe	2	M1 for $2n+k$ where k is an integer	
b i a	20	1		
b i b	25	1		
ii	48	2	M1 for 12 seen (as diagram no.)	
iii	100	2	M1 for 10 seen	
				10 21

TOTAL MARKS 104