June 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 103

SYLLABUS/COMPONENT: 0580/03, 0581/03

MATHEMATICS

Paper 3 (Core)

UNIVERSITY of CAMBRIDGE
International Examinations

Page 1	Mark Scheme	Syllabus	Paper
	MATHEMATICS – JUNE 2004	0580/0581	3

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 ×4 oe seen or SC1 for 3 or 4 correct	
ii	correct pie chart (±2°) 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 *their*((D+E)/T) from their 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× *their* bi (not strict ft)	
c i	(0).6	2	M1 for 3× 0.2	
ii	30	2√	M1 for *their* bii/ci (not strict ft) or 2×3/0.2	
d	(0).02	2	M1 for 2×0.1×0.1 oe SC1 for *fig* 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	

b	13 correct **or** ft correct points (±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.	

ii	8 cao	1		
iii	art 1.78	3	M1 for (*their*) $8^2-7.8^2$ 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×*their*biii) or M1 for 0.5×7.8×*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 5×180−360 or (180−360/5)×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+*their* bii	

iv	300	1√	ft for 180+*their* 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/*their* 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 (±0.1cm and 1^o) 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