

June 2003

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 104

SYLLABUS/COMPONENT: 0580/03, 0581/03

MATHEMATICS

Paper 3 (Core)



Page 1	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – JUNE 2003	0580/0581	3

1	(a)	7	1	
	(b)	42	1	
	(c) (i)	9	1	
	(ii)	8	2	M1 for evidence of idea of mid-value
	(iii)	8.3	3	M1 for $4 \times 5 + 7 \times 6 + \dots + 3 \times 12$ or 415 M1 (dep) for $\div 50$
	(d)	5cm	2	M1 for 1cm to 2 students o.e.
	(e)	36°	2	M1 for $\frac{5}{50} \times 360$
	(f)	\$7.5(0)	2	M1 $\div 3$
	(g)	22	2	M1 for $\frac{11}{50} (x 100)$ SC1 for $\frac{19}{50} (x 100) = 38\%$
	(h) (i)	$\frac{6}{50}$	1	} Accept equivalent fractions, decimals or percentages
	(ii)	$\frac{14}{50}$	1	
	(iii)	1	1	
				19
2	(a)	120,24, 20	1, 1, 1	
	(b)	7 correctly plotted points f.t. correct curve	P3 C1	Deduct 1 for each error ($\pm 1\text{mm}$) Must be a reasonable hyperbola
	(c)	1.6 to 1.8	1	Accept f.t.
	(d)	120,0	2	
	(e)	Straight line through 4 points	L2	L1 if short or not ruled SC1 for $\checkmark$ if all straight lines
	(f)	(1.2 – 1.4, 92 – 96) (4.6 – 4.8, 24 – 26)	1 1	} Accept f.t.
	(g)	-20	2	SC1 for 20 <u>or</u> M1 for rise/run seen (numerical attempt)
				16

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – JUNE 2003	0580/0581	3

3	(a) (i)	175 cents	1	
	(ii)	25 <i>b</i> cents	1	
	(iii)	\$1.75	1 or $\sqrt{}$	
	(iv)	$\$ \frac{b}{4}$ (allow $\frac{25b}{100}$) (0.25 <i>b</i>)	1 or $\sqrt{}$	If involves <i>b</i>
	(b) (i)	$\frac{T}{n}$	1	
	(ii)	The cost of one bar	1	
	(c) (i)	4.5(0)	1	
	(ii)	4.2(0)	2	M1 for (36 – 6.60)/7
	(iii)	$\frac{y}{x}$	1	
	(iv)	$\frac{y-7}{x-1}$	2	B1 for <i>y</i> – 7 or <i>x</i> – 1 seen
				12
4	(a) (i)	<i>P</i> with vertices (4, 11), (2, 11), (2, 12)	2	SC1 if translated by $\begin{pmatrix} 3 \\ 4 \end{pmatrix}$, $\begin{pmatrix} 4 \\ -3 \end{pmatrix}$ etc.
	(ii)	<i>Q</i> with vertices (9, 7), (11, 7), (11, 8)	2	SC1 if reflected in <i>y</i> = 8 or $\sqrt{}$ from <i>P</i>
	(iii)	<i>R</i> with vertices (7, 7), (7, 5), (6, 5)	2	SC1 if 90° clockwise from <i>A</i> or $\sqrt{}$ from <i>Q</i>
	(iv)	<i>S</i> with vertices (7, 7), (3, 7), (3, 9)	2	SC1 if different scale factor about <i>A</i> or enlargement of triangle <i>T</i> s.f. 2 about <i>B</i> or <i>C</i>
	(b) (i)	Translation $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$	1 1	
	(ii)	Enlargement Scale factor 1/2 centre <i>A</i>	1 1 1	
	(c) (i)	90° (anti-clockwise)	1	Accept 270° clockwise
	(ii)	(3, 3)	2	B1 for 1 correct
				16

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – JUNE 2003	0580/0581	3

5	(a) (i)	Accurate and with arcs	2	B1 without arcs or inaccurate
	(ii)	Accurate quarter-circle $r = 5$	2	SC1 for $r > 4.8$ or < 5.2 with compass or correct r but freehand
	(b)	Correct region shaded	1 or $\sqrt$	If convinced
	(c) (i)	45° correct 12cm correct	1 1	$\pm 2^\circ$ $\pm 1\text{mm}$
	(ii)	Reasonable tangent	1	Must be ruled $\pm 5^\circ$
	(iii)	6.8 to 7.2	1	Accept f.t. ± 0.1
				9
6	(a)	$3 \times 1 \times 1.5 + 9 \times 1$ o.e.	2	M1 for appropriate strategy M1 (dep.) for correct numbers used
	(b)	3780	3	M1 for volume is area $\times$ length, 13.5×2.8 or 37.8 B1 for 280 seen
	(c) (i)	1.92	2	M1 for $2 \times 1.2 \times 0.8$
	(ii)	1 920 000 f.t.	2	M1 for (their) (i) $\times 10^6$ or $200 \times 120 \times 80$
	(iii)	507 f.t.	2	M1 for (c) (ii) $\div$ (b) or $507 \cdot \dots$ or 508
	(d)	One vertical line drawn	1	Within $\pm 0.2\text{cm}$ of the centre
	(e)	(order) 1 or no symmetry	1	
				13
7	(a) (i)	84°	1	
	(ii)	22°	1	
	(b)	11	1	Accept 10.8 $\rightarrow$ 11, 10min 48sec $\rightarrow$ 11min
	(c)	16°	1	
	(d) (i)	32, (16), 8, 4	3	B1 for each
	(ii)	Halving o.e.	1	
	(e)	20°	1	Allow answer >20 and <22
				9

Page 4	Mark Scheme	Syllabus	Paper
	IGCSE EXAMINATIONS – JUNE 2003	0580/0581	3

8	(a)	3 new lines from the vertex to the base	2	
	(b)	$6, 7, n + 2$	3	B1 for each
	(c)	15, 21, 55	3	B1 for each
	(d)	12	2	SC1 for 10 or 11
				10