UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/03**

Paper 3 (Core) **For Examination from 2010**

SPECIMEN MARK SCHEME

1 hour 45 minutes

MAXIMUM MARK: 96

This document consists of **5** printed pages and **1** blank page.

UNIVERSITY of CAMBRIDGE International Examinations

[Turn over

TYPES OF MARK

- **M** marks are given for a correct method.
- **A** marks are given for an accurate answer following a correct method.
- **B** marks are given for a correct statement or step.
- **D** marks are given for clear and appropriately accurate drawing.
- **P** marks are given for accurate plotting of points.
- **E** marks are given for correctly explaining or establishing a given result.
- **C** marks are given for clear communication (Papers 5 and 6 only).
- **R** marks are given for appropriate reasoning (Papers 5 and 6 only).

ABBREVIATIONS

- ft Follow through
- oe Or equivalent
- soi Seen or implied
- www Without wrong working

1	**(a)**		Enlargement, (scale) factor 2, (centre) (4, 3)	B1B1 B1	Allow sf or anything clear for scale factor
	(b)		Correct image drawn (5, –4), (5, –3), (2, –4)	B2	If B0, allow B1 for any translation not parallel to either axis
	(c)		Correct image drawn (–1, 1), (–4, 1), (–4, 2)	B2	If B0, B1 for reflection in *x*–axis **[7]**
2	**(a)**		17 12	B1	
	(b)	**(i)**	0.6 × 1.20 ($) 0.72 www 2	M1 A1	Allow 72 cents but not 72
		(ii)	1.2 : 0.72 oe 5:3 www 2	M1 A1	
	(c)		$\frac{0.45}{3} \times 100$ 15 www 2	M1 A1	
	(d)		$\frac{2.10}{7} \times 6$ ($) 1.80 www 2	M1 A1	**[9]**
3	**(a)**	**(i)**	$\frac{AB}{12} = \tan 28°$ 6.38 (6.380….) www 2	M1 A1	
		(ii)	0.5 × 12 × *their* **(a)(i)** 38.3 (38.28…..) www 2	M1 A1	
	(b)	**(i)**	*their* **(a)(ii)** × 30 1150 (1148. ……) ft www 2	M1 A1	
		(ii)	$\sqrt{12^2 + (their(\boldsymbol{a})(\boldsymbol{i}))^2}$ 13.6 (13.59……) www 2	M1 A1	
		(iii)	12 × 30 + *their* **(a)(i)** × 30 + *their* **(b)(ii)** × 30 + *their* **(a)(ii)** × 2 1040 (1035. …. – 1036) www 3	M2 A1	M1 for any one correct rectangle M1 for 3 rectangles plus two triangles **[11]**

4	**(a)**	Good sketch, two branches	D2D2	Penalty 1 each: poor curve; not going through or near to (1, 0); touching y-axis second branch not changing curvature
	(b)	(1, 0)	B1	
	(c)	(–0.794, 1.89)	B1B1	
	(d)	$x = 0$	B1	Allow y – axis
	(e)	Reasonable parabola through (–2, 0) and (2, 0)	D2	
	(f)	(–1.27, 2.39) or (–0.259, 3.93) or (1.53, 1.67)	B1B1	
	(g)	–1.27, –0.259, 1.53	B1B1 B1	**[15]**
5	**(a)**	$\frac{2}{5}$	B1	
	(b) **(i)**	$\frac{2}{5} \times \frac{2}{5}$	M1	
		$\frac{4}{25}$ www2	A1	
	(b) **(ii)**	1, 2 2, 1	B1 B1	Allow 1, 2 and 2, 1 written twice
	(iii)	$\frac{4}{25}$	B2	If B0, M1 for correct method e.g. possibility diagram or list (full or almost full)
	(c) **(i)**	1.9	B1	
	(ii)	1	B1	
	(iii)	1.5	B1	
	(d) **(i)**	1.92	B1	
	(ii)	1	B1	
	(iii)	2	B1	
	(iv)	3	B1	
	(v)	3	B1	**[15]**

6	**(a)**	**(i)**	108	B2	If B0, allow B1 for 540 seen or 360÷5 seen
		(ii)	36	B1	
		(iii)	72	B1	
		(iv)	72	B1	
	(b)		108	B2	If B0, allow B1 for evidence of angle *OAB* or *OBA* being 90
	(c)		18	B2	If B0, allow M1 for 108 – angle *ABE* – angle *OBC* oe **[9]**
7	**(a)**		$25\,000 \times 0.9^3$ (\$) 18 225	M2 A1	If M0, give M1 for $25\,000 \times 0.9$ at least once
	(b)		25 000 – *their* **(a)(i)** $\frac{\textit{their}(25000 - \textit{their}(\boldsymbol{a})(\boldsymbol{i}))}{25000} \times 100$ 27.1	M1 M1 A1	
	(c)		7 (years)	B2	If B0, give M1 for attempting repeated multiplications of 0.9 **[8]**
8	**(a)**		12 points correctly plotted	B3	B2 for 11 and B1 for 10 points
	(b)		(14.5, 31.2) plotted	B1	
	(c)		Reasonable line by eye, passing through point in **(b)**	B2	B1 if reasonable but not through point in **(b)**
	(d)		24.0 – 25.0	B1	**[7]**
9	**(a)**		$2 \times \pi \times 4.7 \times 11.4$ 337 (336.6……)	M1 A1	
	(b)		$(h =) \frac{A}{2\pi r}$	M2	M1 for ÷ by any one of 2, π, *r*
	(c)		$\frac{90.3}{2 \times \pi \times 2.7}$ 5.32	M1 A1	**[6]**

10	**(a)**		Two good branches each with its turning point	D2	Penalty 1 each; poor quality; touching y-axis
	(b)		(0, 0)	B1	
	(c)		Any value > 1	B1	
	(d)		Any value ≤ 1	B1	
	(e)		1	B1	
	(f)	**(i)**	Reasonable rectangle drawn	B1	
		(ii)	20	B2	If B0, B1 for evidence of 4 or 5 for length of a side of a rectangle **[9]**