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CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22 Paper 2 (Extended), maximum raw mark 40

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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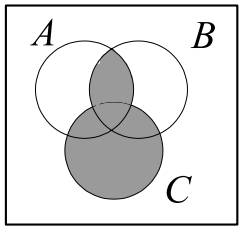
1	(a) (i)	15	1	
	(ii)	26	1	
	(b)		1	
2	(a)	65	1	
	(b)	130	1	
	(c)	115	1	
3	(a)	Image at (–3, 1), (3, 1), (–3, –8)	2	**B1** for correct shape and orientation but incorrect centre
	(b)	Stretch [factor] 3 *y*-axis invariant	1 1 1	marks are independent
4	(a)	$8x^{14}$	2	**B1** for kx^{14} or $8x^{k}$, $k \neq 0$
	(b)	$-\frac{1}{3}$ o.e.	2	**M1** for evidence of $2^3 = 8$
5	(a)	$\frac{2\sqrt{3}}{3}$	1	
	(b)	$\frac{\sqrt{3}+1}{2}$	2	**M1** for $\times \frac{\sqrt{3}+1}{\sqrt{3}+1}$
6	(a)	1.5×10^5	2	**B1** for 150 000
	(b)	$\sqrt[3]{\frac{y}{a}}$	2	**M1** for $\div a$ correctly **M1** for cube root correctly
7	(a)	$\log\left(\frac{(x+1)^2}{x-1}\right)$	2	**M1** for $\log(x+1)^2$ or $\log\left(\frac{1}{x-1}\right)$
	(b)	81	2	**M1** for $p = 3^4$
8	(a)	42	1	
	(b)	$n(n+1)$ o.e.	3	**M2** for $an^2 + bn + c$, a not zero and b, c not both zero or **M1** for reaching differences of 2 or 'as above' with both b, c zero

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9	**(a)**	–7	**2**	**B1** for f(–4) = –5
	(b)	$\frac{x-3}{2}$	**2**	**M1** for $x = 3 + 2y$ or $y - 3 = 2x$ or $\frac{y}{2} = \frac{3}{2} + x$
10		$y = \frac{96}{x^2}$	**2**	**M1** for $y = \frac{k}{x^2}$ o.e.
11	**(a)**	$\pi(R+r)(R-r)$	**2**	**B1** for $\pi(R^2 - r^2)$ or $(\pi R + \pi r)(R - r)$ or $(\pi R - \pi r)(R + r)$
	(b)	2.5 o.e.	**2**	**M1** for reaching $\pi(2r + 3)3 = 24\pi$ or better or for reaching $R + r = 8$ **and** $R - r = 3$