

**MARK SCHEME for the May/June 2013 series**

**0607 CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/22**

Paper 2 (Extended), maximum raw mark 40

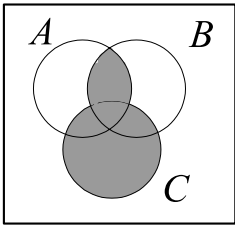
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, 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	<b>B1</b> for correct shape and orientation but incorrect centre marks are independent
	(b)	Stretch [factor] 3 $y$ -axis invariant	1 1 1	
4	(a)	$8x^{14}$	2	<b>B1</b> for $kx^{14}$ or $8x^k$ , $k \neq 0$
	(b)	$-\frac{1}{3}$ o.e.	2	<b>M1</b> for evidence of $2^3 = 8$
5	(a)	$\frac{2\sqrt{3}}{3}$	1	
	(b)	$\frac{\sqrt{3}+1}{2}$	2	<b>M1</b> for $\times \frac{\sqrt{3}+1}{\sqrt{3}+1}$
6	(a)	$1.5 \times 10^5$	2	<b>B1</b> for 150 000
	(b)	$\sqrt[3]{\frac{y}{a}}$	2	<b>M1</b> for $\div a$ correctly <b>M1</b> for cube root correctly
7	(a)	$\log\left(\frac{(x+1)^2}{x-1}\right)$	2	<b>M1</b> for $\log(x+1)^2$ or $\log\left(\frac{1}{x-1}\right)$
	(b)	81	2	<b>M1</b> for $p = 3^4$
8	(a)	42	1	
	(b)	$n(n+1)$ o.e.	3	<b>M2</b> for $an^2 + bn + c$ , $a$ not zero and $b, c$ not both zero or <b>M1</b> for reaching differences of 2 or ‘as above’ with both $b, c$ zero

Page 3	Mark Scheme	Syllabus	Paper
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9	(a)	-7	2	<b>B1</b> for $f(-4) = -5$
	(b)	$\frac{x-3}{2}$	2	<b>M1</b> for $x = 3 + 2y$ or $y - 3 = 2x$ or $\frac{y}{2} = \frac{3}{2} + x$
10		$y = \frac{96}{x^2}$	2	<b>M1</b> for $y = \frac{k}{x^2}$ o.e.
11	(a)	$\pi(R+r)(R-r)$	2	<b>B1</b> 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	<b>M1</b> for reaching $\pi(2r + 3)3 = 24\pi$ or better or for reaching $R + r = 8$ <b>and</b> $R - r = 3$