CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

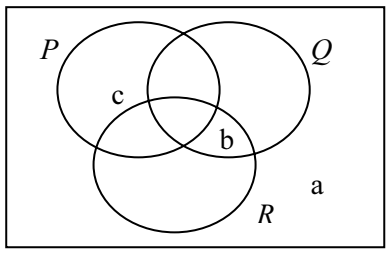
0607/21 Paper 2 (Extended), maximum raw mark 40

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.

1		1.387×10^9	**2**	**B1** for figs 1387 or 12.1×10^8 or 0.177 ×
2	**(a)**	(1, 3)	**1**	
	(b)	$-\frac{2}{3}$ o.e. –0.667 or better	**2**	**M1** for clear attempt at y increase / x increase
	(c) (i)	$y = \frac{3}{2}x + 4$	**2FT**	**M2FT** for $y = (-1/$*their* **(b)**$)x + 4$ **M1** for $m = -1/$*their* **(b)**
	(ii)	$-\frac{8}{3}$ o.e. –2.67 or better	**1FT**	**FT** from *their* **(c)(i)** but not from $y = kx$
3		$x = 3$ $y = -2$	**3**	**M1** for correct equation in 1 variable **A1** for each answer
4	**(a)**	0.39, (0.2), 0.18, 0.15, 0.08	**2**	**B1** for any 3 seen
	(b)	3600	**2**	**M1** for 0.2 × 18 000 o.e.
5	**(a)**	115°	**2**	**B1** for reflex angle $AOD = 230°$ or cyclic quad drawn with angle 65°
	(b)	65°	**2FT**	**FT** 180 – *their* **(a)** **B1** for angle $ACD =$ *their* **(a)** $(=x)$
6			**3**	1 for each correctly placed
7	**(a) (i)**	3	**1**	
	(ii)	–2	**1**	
	(b)	12.5	**2**	**B1** for $\log 5^2$ or $\log 2p$ or $\log k/2$ seen
8		7.5	**4**	**M1** for $\frac{160}{360} \times \pi \times r^2$ **M1** for their sector $= \pi \times 25$ **M1** for elimination of π
9	**(a)**	$7\sqrt{2}$	**2**	**B1** for $5\sqrt{2}$ or $2\sqrt{2}$ seen
	(b)	$28 + 10\sqrt{3}$	**2**	**B1** for $25 + 5\sqrt{3} + 5\sqrt{3} + \sqrt{3} \times \sqrt{3}$

10	$\frac{2by + 3y}{a - b}$ o.e.	**3**	**B1** for $bx + 2by$ **M1** for correctly isolating x terms **M1** for correctly factorising and dividing by bracket
11	**a + b** $-\frac{1}{2}\mathbf{a} - \mathbf{b}$ 2**b** – **a**	**1** **1** **1**	All answers must be in the form p**a** + q**b**