CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 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.

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Abbreviations

cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfww	not from wrong working
soi	seen or implied

1	**(a)**	4700	**1**	
	(b)	[0].010	**1**	
2	**(a)**	$-6x+7$	**2**	**B1** for $-6x+3x^2$ or $-3x^2+7$
	(b)	$25xy-25x^2-6y^2$	**3**	**B2** for $10xy-25x^2-6y^2+15xy$ or **B1** for 1 error in above
3		$\frac{1}{3}$	**2**	**B1** for 3 seen or for $\frac{1}{\sqrt[3]{27}}$
4		$4x^4y$	**2**	**B1** for kx^4y or $4x^ky$ or $4x^4y^k$
5	**(a)**	$10\sqrt{3}$	**2**	**M1** for $3\sqrt{3}$ or $7\sqrt{3}$
	(b)	$\frac{7-3\sqrt{5}}{2}$ or $\frac{14-6\sqrt{5}}{4}$	**3**	**M1** for $\times\frac{3-\sqrt{5}}{3-\sqrt{5}}$ **M1** for $\frac{a-b\sqrt{5}}{4}$ $a,b\neq 0$ oe
6		50	**3**	**M2** for $[\log]\left(\frac{5x}{25}\right)=[\log]10$ oe or **M1** for a correct use of logs
7			**4**	**B1** for 240 **B1** for 72 **M1** for $\frac{2}{3}\times$ *their* 72

	Boys	Girls	Total
Can	112	168	280
Cannot	48	72	120
Total	160	240	

8	**(a)**	1	**1**	
	(b)	45°	**2**	**M1** for $\tan 45 = 1$ or **M1** for $\tan y = \textit{their}$**(a)** or **M1** for $\frac{(180-90)}{2}$
9	**(a)**	$\frac{1}{10}$ oe	**1**	
	(b)	2	**2**	**M1** for $3x - 2 = 4$
	(c)	$\frac{1}{3}\left(\frac{1}{x}+2\right)$ oe	**3**	**M1** for one correct step **M1** for 'swapping' x and y
10	**(a)**	$\frac{1}{6}$ **p**	**2**	**B1** for $DC = \frac{1}{2}$**p** soi
	(b)	$\frac{5}{12}$**p** – **q**	**2**	**M1** for $-$**q** $+ \frac{3}{4}$**p** seen
11		$y = 2x - 1$ oe	**4**	**B1** for [mid-point =] (4, 7) **B1** for [gradient =] –0.5 **M1** for grad of perp = $\frac{-1}{\textit{their}(-0.5)}$