

**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.

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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
nfw	not from wrong working
soi	seen or implied

1	(a)	4700	1																	
	(b)	[0].010	1																	
2	(a)	$-6x + 7$	2	<b>B1</b> for $-6x + 3x^2$ or $-3x^2 + 7$																
	(b)	$25xy - 25x^2 - 6y^2$	3	<b>B2</b> for $10xy - 25x^2 - 6y^2 + 15xy$ or <b>B1</b> for 1 error in above																
3		$\frac{1}{3}$	2	<b>B1</b> for 3 seen or for $\frac{1}{\sqrt[3]{27}}$																
4		$4x^4y$	2	<b>B1</b> for $kx^4y$ or $4x^k y$ or $4x^4 y^k$																
5	(a)	$10\sqrt{3}$	2	<b>M1</b> for $3\sqrt{3}$ or $7\sqrt{3}$																
	(b)	$\frac{7-3\sqrt{5}}{2}$ or $\frac{14-6\sqrt{5}}{4}$	3	<b>M1</b> for $\times \frac{3-\sqrt{5}}{3-\sqrt{5}}$  <b>M1</b> for $\frac{a-b\sqrt{5}}{4}$ $a, b \neq 0$ oe																
6		50	3	<b>M2</b> for $[\log] \left(\frac{5x}{25}\right) = [\log] 10$ oe  or <b>M1</b> for a correct use of logs																
7		<table border="1"> <thead> <tr> <th></th> <th>Boys</th> <th>Girls</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Can</td> <td>112</td> <td>168</td> <td>280</td> </tr> <tr> <td>Cannot</td> <td>48</td> <td>72</td> <td>120</td> </tr> <tr> <td>Total</td> <td>160</td> <td>240</td> <td></td> </tr> </tbody> </table>		Boys	Girls	Total	Can	112	168	280	Cannot	48	72	120	Total	160	240		4	<b>B1</b> for 240 <b>B1</b> for 72 <b>M1</b> for $\frac{2}{3} \times their 72$
	Boys	Girls	Total																	
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8	(a)	1	1	
	(b)	$45^\circ$	2	M1 for $\tan 45 = 1$ or M1 for $\tan y = \text{their(a)}$ 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 = $\frac{-1}{\text{their}(-0.5)}$