CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 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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1	**(a)**	$(x+y)(x-y)$	**1**	
	(b)	25 600	**1**	
2	**(a)**	$2\sqrt{3}$	**1**	
	(b)	30	**1**	
	(c)	150, –150	**2**	**B1** for 1 correct answer –1 for extra answer(s) in range
3	**(a)**	8	**1**	
	(b)	x^2y^2	**2**	**B1** for 1 correct term
4		12.5	**3**	**M2** for $\frac{20}{1.6}$ oe or **M1** for 160% = 20
5	**(a)**	310	**1**	
	(b)	6	**2**	**M1** for $\frac{9.3}{1.55}$
6	**(a)**	$2\sqrt{3}$	**2**	**B1** for $5\sqrt{3}$ or $3\sqrt{3}$
	(b)	$\frac{7(5+\sqrt{2})}{23}$	**2**	Accept other correct alternate numerators, but must see 23. **M1** for $\times\frac{(5+\sqrt{2})}{(5+\sqrt{2})}$

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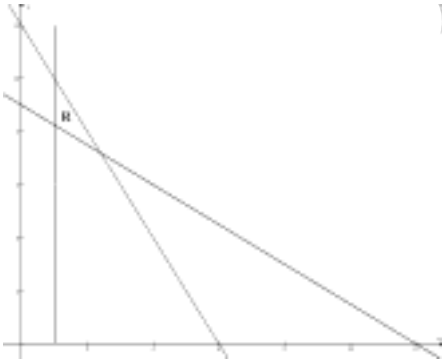
7	(a)			Answers on the diagram
		$x = 1$	**1**	
		$y = 12 - 2x$	**2**	**B1** for ruled line with correct gradient, or **B1** for correct intercept on either axis
		$4y + 3x = 36$	**2**	**B1** for ruled line with correct gradient, or **B1** for correct intercept on either axis
	(b)	R in correct region	**1**	
	(c) (i)	9.25 or 9.1 to 9.4	**1**	
	(ii)	(1, 8.25) or (1, 8.1 to 8.4)	**1**	

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8 **(a)**	$\frac{7}{10}, \frac{6}{9}, \frac{3}{9}, \frac{7}{9}, \frac{2}{9}$ correctly placed	**2**	**B1** 3 probs correct
(b) **(i)**	$\frac{7}{15}$ oe	**2**	**M1 FT** for *their* $\frac{7}{10} \times$ *their* $\frac{6}{9}$
(ii)	$\frac{14}{15}$ oe	**3**	**M2** for $\left(1-\frac{1}{15}\right)$, or two of $\left[\left(\frac{7}{10}\times\frac{6}{9}\right)+\left(\frac{7}{10}\times\frac{3}{9}\right)+\left(\frac{3}{10}\times\frac{7}{10}\right)\right]$ seen or **M2** for $\left(1-\frac{3}{10}\times \textit{their}\ \frac{2}{9}\right)$ or two of $\left[\textit{their}\ \frac{7}{10}\times\textit{their}\ \frac{6}{9}+\textit{their}\ \frac{7}{10}\times\textit{their}\ \frac{3}{9}+\left(\frac{3}{10}\times\textit{their}\ \frac{7}{9}\right)\right]$ or **M1** for $\frac{3}{10}\times$ *their* $\frac{2}{9}$ or 2 of *their* products correct.
9 **(a)**	7	**1**	
(b)	$\frac{1}{5}$	**2**	**B1** for $\frac{24}{120}$ oe
10	1, – 2.5 oe cao	**3**	**M1** Correct multiplication eliminating fractions **M1** Correct simplification leading to $4x + 3 = \pm 7$ or **M1** Correct multiplication eliminating fractions **M1** Correct simplification leading to quadratic equation $16x^2 + 24x - 40 = 0$ If **M0** then **SC1** for $x = 1$ only.

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