UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2010 question paper for the guidance of teachers

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/02 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 must be read in conjunction with the question papers and the report on the examination.

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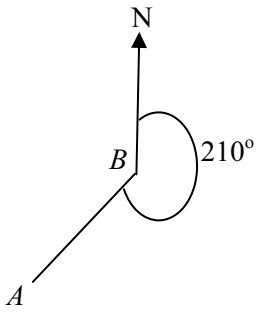
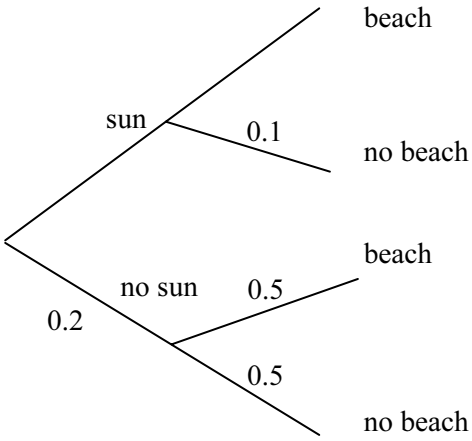
1	**(a)**	$5\sqrt{3}$	B2	Award M1 for evidence of $\sqrt{25\times 3}$
	(b)	3	B1	**[3]**
2		$c(2a-5b)+3(2a-5b)$ or $2a(c+3)-5b(c+3)$	M1	
		$(2a-5b)(c+3)$ www2	A1	**[2]**
3		$\frac{a-1}{6-2}=\frac{3}{2}$ oe For correctly setting out the gradient	M1	Alternative solution $y=\frac{3}{2}x-2$
		$2a-2=12$ For a correct method to eliminate the fractions from a correct equation	M1	$a=\frac{3}{2}\times 6-2$ For substituting a and 6 correctly
		$a=7$ www3	A1	$a=7$ **[3]**
4	**(a)**	45	B1	
	(b)	25	B2	If B0 award B1 for 30 or 55 seen and not spoilt by use of 150 and/or 50
	(c)	34 to 36 inclusive	B2	If B0 award B1 for 128 to 132 inclusive seen **[5]**
5	**(a)**	x^2y oe	B1	
	(b)	$4xy+2x^2$ oe	B2	B1 for $2x^2$, B1 for $4xy$ **[3]**
6	**(a)**		P1	A and B must be labelled correctly, with A between South and West
	(b)	50sin30 seen oe	M1	Allow implicit form If scale drawing used then M0
		25 ww2	A1	**[3]**

7		$2\begin{pmatrix}3\\-2\end{pmatrix}+k\begin{pmatrix}-2\\5\end{pmatrix}=\begin{pmatrix}-2\\16\end{pmatrix}$ oe $6-2k=-2$ or $-4+5k=16$ $k=4$ www3	M1 M1 A1	For setting up equation Implies first M1 **[3]**
8	**(a)**	13	B1	
	(b)	$3(2x-1)^2+1$ isw	B2	isw attempts to expand/simplify only. If B0 award M1 for g($2x-1$) seen.
	(c)	$\frac{x+1}{2}$	B2	If B0 award M1 for $x=2y-1$ or $\frac{y+1}{2}$ or $\frac{f(x)+1}{2}$ **[5]**
9		For correct histogram with frequency density values of k(2, 1, 0.5, 6, 2) where $k>0$	P3	Award P2 for one error, P1 for two errors, P0 otherwise, Or SC1 for correct frequency densities, Or SC2 for correct histogram with freq polygon superimposed. **[3]**
10	**(a)**		B2	Award B1 for two correct values in correct positions, B0 otherwise
	(b)	$0.8\times0.9+0.2\times0.5$ 0.82 www2	M1 A1	SC1 for 0.8×0.9 (= 0.72) or 0.2×0.5 (= 0.1) seen **[4]**

11	Two correct simultaneous equations e.g. two of $9a + 3b = 6$, $a - b = 6$, $a + b = -2$, $4a + 2b - 6 = -6$ oe Correct method to eliminate one variable Condone one slip $a = 2$ and $b = -4$ www3	M1 M1dep A1	<u>Alternative Solution</u> $(y =)\ \ a(x - -1)(x - 3)$ oe Correct substitution of values for x and y e.g. $-6 = a \times 1 \times -3$ $a = 2$ and $b = -4$ If M0 scored then SC2 for $(x - -1)(x - 3)$ oe seen <u>and</u>, $a = 2$ or $b = -4$ **[3]**
12	**D** **E** **A**	B1 B1 B1	**[3]**