

**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

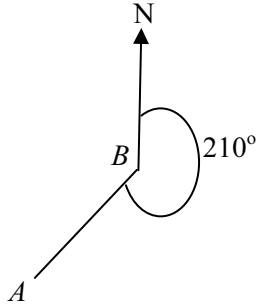
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Mark schemes must be read in conjunction with the question papers and the report on the examination.

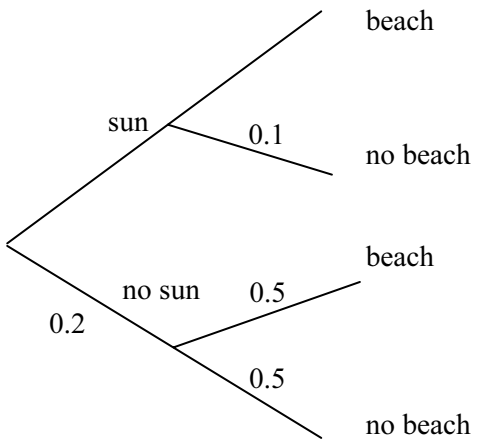
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Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
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1	(a)	$5\sqrt{3}$	B2	Award M1 for evidence of $\sqrt{25 \times 3}$
	(b)	3	B1	
2		$c(2a - 5b) + 3(2a - 5b)$ or $2a(c + 3) - 5b(c + 3)$	M1	
		$(2a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

Page 3	Mark Scheme: Teachers' version	Syllabus	Paper
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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	isw attempts to expand/simplify only. If B0 award M1 for $g(2x - 1)$ seen. If B0 award M1 for $x = 2y - 1$ or $\frac{y+1}{2}$ or $\frac{f(x)+1}{2}$ [5]
(b)	$3(2x - 1)^2 + 1$ isw	B2	
(c)	$\frac{x+1}{2}$	B2	
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)	$0.8 \times 0.9 + 0.2 \times 0.5$ $0.82$ www2	M1 A1	SC1 for $0.8 \times 0.9 (= 0.72)$ or $0.2 \times 0.5 (= 0.1)$ seen [4]

<b>Page 4</b>	<b>Mark Scheme: Teachers' version</b>	<b>Syllabus</b>	<b>Paper</b>
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<b>11</b>	<p>Two correct simultaneous equations e.g. two of <math>9a + 3b = 6</math>, <math>a - b = 6</math>, <math>a + b = -2</math>, <math>4a + 2b - 6 = -6</math> oe</p> <p>Correct method to eliminate one variable Condone one slip</p> <p><math>a = 2</math> and <math>b = -4</math></p> <p style="text-align: right;">www3</p>	<p>M1</p> <p>M1dep</p> <p>A1</p>	<p><u>Alternative Solution</u> (y =) <math>a(x - -1)(x - 3)</math> oe</p> <p>Correct substitution of values for <math>x</math> and <math>y</math> e.g. <math>-6 = a \times 1 \times -3</math></p> <p><math>a = 2</math> and <math>b = -4</math></p> <p>If M0 scored then SC2 for <math>(x - -1)(x - 3)</math> oe seen <u>and</u>, <math>a = 2</math> or <math>b = -4</math></p> <p style="text-align: right;"><b>[3]</b></p>
<b>12</b>	<b>D</b> <b>E</b> <b>A</b>	<p>B1</p> <p>B1</p> <p>B1</p>	<p style="text-align: right;"><b>[3]</b></p>