

**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.

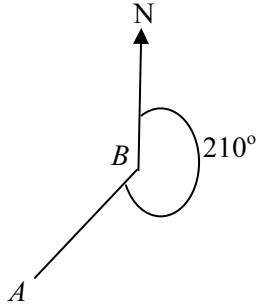
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Page 2	Mark Scheme: Teachers' version	Syllabus	Paper
	IGCSE – October/November 2010	0607	02

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	
(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)	<p>The diagram shows a probability tree for sun and beach. The root node branches into 'sun' and 'no sun'. From 'sun', it branches into 'beach' (0.8) and 'no beach' (0.2). From 'no sun', it branches into 'beach' (0.9) and 'no beach' (0.1).</p>	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>	<p><b>D</b></p> <p><b>E</b></p> <p><b>A</b></p>	<p>B1</p> <p>B1</p> <p>B1</p>	<p style="text-align: right;"><b>[3]</b></p>