

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**

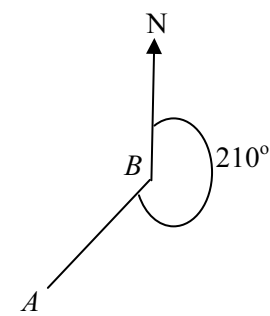
Paper 2 (Extended), maximum raw mark 40

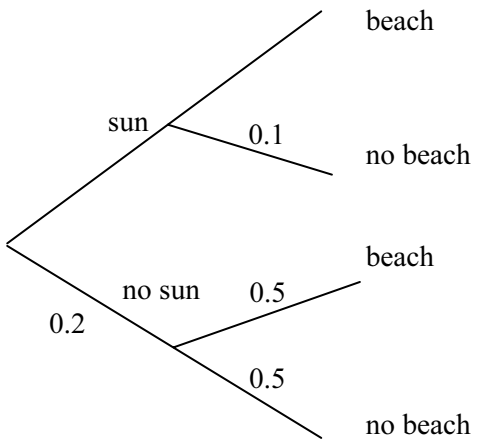
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, 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	
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 spoiled 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

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 $-4 + 5k = 16$ $k = 4$ <p style="text-align: right;">www3</p>	<p>M1</p> <p>M1</p> <p>A1</p>	<p>For setting up equation</p> <p>Implies first M1</p> <p style="text-align: right;">[3]</p>
8 (a)	13	B1	<p>isw attempts to expand/simplify only. If B0 award M1 for <math>g(2x - 1)</math> seen.</p> <p>If B0 award M1 for <math>x = 2y - 1</math> or <math>\frac{y+1}{2}</math> or <math>\frac{f(x)+1}{2}</math></p> <p style="text-align: right;">[5]</p>
(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	<p>Award P2 for one error, P1 for two errors, P0 otherwise,</p> <p>Or SC1 for correct frequency densities,</p> <p>Or SC2 for correct histogram with freq polygon superimposed.</p> <p style="text-align: right;">[3]</p>
10 (a)		B2	<p>Award B1 for two correct values in correct positions, B0 otherwise</p>
(b)	$0.8 \times 0.9 + 0.2 \times 0.5$ 0.82 <p style="text-align: right;">www2</p>	<p>M1</p> <p>A1</p>	<p>SC1 for <math>0.8 \times 0.9 (= 0.72)</math> or <math>0.2 \times 0.5 (= 0.1)</math> seen</p> <p style="text-align: right;">[4]</p>

Page 4	Mark Scheme: Teachers' version	Syllabus
	IGCSE – October/November 2010	0607

11	Two correct simultaneous equations e.g. two of $9a + 3b = 6$ , $a - b = 6$ , $a + b = -2$ , $4a + 2b - 6 = -6$ oe	M1	<u>Alternative Solution</u> (y =) $a(x - -1)(x - 3)$ oe
	Correct method to eliminate one variable Condone one slip	M1dep	Correct substitution of values for $x$ and $y$ e.g. $-6 = a \times 1 \times -3$
	$a = 2$ and $b = -4$  www3	A1	$a = 2$ 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]