MARK SCHEME for the October/November 2012 series

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

1		$3y(x - 2z)$	2	B2	B1 for $3(xy - 2yz)$ or $y(3x - 6z)$
2	(a)	12.5	2	B2	M1 for $\frac{250}{2000}[\times 100]$ oe
	(b)	40	3	B3	M2 for $46 \div 1.15$ oe or M1 for recognising $46 = 115\%$ soi
3	(a)	[0]8 13	1	B1	Accept 8 13 am and other possible forms of time of day.
	(b)	3.5	2	B2	M1 for $\frac{1.4}{24}(\times 60)$ oe
4		8.1×10^{-8}	2	B2	B1 for 0.81×10^{-7}
5	(a)	$\frac{16\sqrt{2}}{3}$	2	B2	M1 for $\frac{p}{8} = \cos x$ or better
	(b)	$(45, 3)$ or $(\pi/4, 3)$	2	B1B1	
6	(a)	$\frac{8}{27}$	2	B2	B1 for $1\big/(3/2)^3$ or $\left(\frac{27}{8}\right)^n$ or better i.e. B1 for one correct first step.
	(b)	$\frac{1}{2}$ oe	2	B2	B1 for $\log 2^3 - \log 4^2$ or better
7	(a)	$\frac{12}{\sqrt{x}}$ oe	2	B2	M1 for $y = \frac{k}{\sqrt{x}}$ $k \neq 1$
	(b)	2	1FT	B1FT	FT their k only if $k\big/\sqrt{x}$ or $k\sqrt{x}$ $k \neq 1$
8		$\frac{x-2}{x-1}$ final answer	2	B2	M1 for $\frac{x-1}{x-1} - \frac{1}{x-1}$ o.e. If final answer spoiled, the M1 is still available
9	(a) (i)	$\begin{pmatrix} 3 \\ 5 \end{pmatrix}$	1	B1	
	(ii)	$(-2, 1)$	1	B1	
	(b)	$\mathbf{p} + \frac{1}{2}\mathbf{r}$ oe	2	B2	M1 for recognising $\overrightarrow{OM}$ soi e.g. $\overrightarrow{OP} + \overrightarrow{PM}$
10	(a)	$4\sqrt{2}$ final answer	1	B1	
	(b)	$\sqrt{2} - 1$ final answer	2	B2	M1 for $\times \frac{\sqrt{2}-1}{\sqrt{2}-1}$
11	(a)	9	1	B1	
	(b)	14	2	B2	M1 for 2^2 or 0.5^2 seen

12 (a)	$\dfrac{6}{20}$ oe	2	B2	M1 for $\dfrac{3}{5} \times \dfrac{2}{4}$
(b)	$\dfrac{18}{35}$ oe	3	B3	M2 for $\dfrac{3}{5} \times \dfrac{4}{7} + \dfrac{2}{5} \times \dfrac{3}{7}$ or M1 for either of these products

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