CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/22 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.

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Abbreviations

cao correct answer only
dep dependent
FT follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
nfww not from wrong working
soi seen or implied

Question	Answer	Mark	Part Marks
1 (a)	20	**1**	
(b)	1.6×10^{-6}	**2**	**B1** for correct answer not in standard form
2 (a)	1.25 oe	**3**	**M1** Correct expansion; condone 1 slip **M1** Correct simplification of *their* equation into the form $kx = a$
(b)	–2 3.5	**1** **1**	
3	50	**3**	**B2** for $x = 2y^2$ oe or **M1** for $x = ky^2$ **B1** for $k = 2$
4 (a)	$\frac{1}{36}$	**2**	**M1** for $\frac{1}{6} \times \frac{1}{6}$ or $\frac{k}{36}$
(b)	0 oe	**1**	
(c)	$\frac{6}{36}$ oe	**2**	**M1** for establishing all 6 possible combinations **SC1** for $\frac{3}{36}$
5 (a)	$\begin{pmatrix} -1 \\ -3 \end{pmatrix}$	**2**	**B1** for each component
(b)	13	**2**	**M1** for $\sqrt{5^2 + (-12)^2}$ or better
6 (a)	$(4x + y)(2a - b)$	**2**	**B1** for factor of $4x + y$, or factor of $2a - b$ or factor of $b - 2a$ seen
(b)	$(3x + 4)(x - 3)$	**2**	**M1** for $(3x + a)(x + b)$, where $ab = -12$, or $a + 3b = -5$
7 (a)	1	**1**	
(b)	$\frac{1}{25}$	**1**	

Question	Answer	Mark	Part Marks
8 (a)	72	**1**	
(b)	144	**1FT**	2 × *their* **(a)**
(c)	18	**1FT**	$\frac{180 - their144}{2}$
(d)	18	**1FT**	*their* **(c)**
9 (a)	4	**3**	**M2** for $\sqrt{8^2 - \sqrt{48}^2}$ or **M1** for $8^2 = \sqrt{48}^2 + BC^2$ or better
(b)	30	**2**	**B1** for $\sin = \frac{4}{8}$ or $\cos = \frac{\sqrt{48}}{8}$ or $\tan = \frac{4}{\sqrt{48}}$
10	[*h*=] 2 [*k*=] – 3	**1** **1**	
11	Bars with correct column widths Bars with heights 0.8, 3.2, 4, 1.2, 0.7	**1** **2**	 **B1** for 3 or 4 correct