CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 series

0580 MATHEMATICS

0580/11 Paper 1 (Core), maximum raw mark 56

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.

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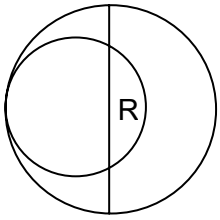
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Abbreviations

cao correct answer only
cso correct solution only
dep dependent
ft follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
www without wrong working

Qu.	Answers	Mark	Part Marks
1	 cao	**1**	
2	[0].03	**1**	
3	**(a)** 162 **(b)** obtuse	**1** **1**	
4	**(a)** 29 000 **(b)** 60	**1** **1**	
5	**(a)** 7 **(b)** 4.5 or 4½	**1** **1**	
6	–16	**2**	**M1** for 4×6.5
7	$8j - 3k - 8$ final answer	**2**	**B1** for two correct terms in final answer **or** for correct answer seen then spoilt
8	16	**2**	**M1** for $768 \div 48$
9	[0].852 **or** $\frac{23}{27}$	**2**	**B1** for 85.56 **or** $\frac{2139}{25}$
10	**(a)** 2.3×10^5 **(b)** [0].00048	**1** **1**	
11	$\frac{\frac{17}{9}}{\frac{5}{2}}$ **or** $\frac{17}{9} \div \frac{5}{2}$ $\frac{17}{9} \times \frac{2}{5} = \frac{34}{45}$	**M1** **M1**	$\frac{\frac{34}{18}}{\frac{45}{18}}$ **or** $\frac{34}{18} \div \frac{45}{18}$ $\frac{34}{18} \times \frac{18}{45} = \frac{34}{45}$
12	112 **or** 112.3 to 112.33	**3**	**M2** for $\pi \times 6^2 - \pi \times 0.5^2$ or **M1** for $\pi \times 6^2$ or $\pi \times 0.5^2$ seen
13	**(a)** $3(3y + 4)$ final answer **(b)** $a^3 - 7a$ final answer	**1** **2**	 **B1** for a^3 or $-7a$ in final answer **or** for correct answer seen then spoilt
14	**(a)** $\frac{24}{75}$ oe **(b)** 84	**1** **2**	 **M1** for $450 \times \frac{14}{75}$ or 6×14

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15	**(a)** $\frac{20}{45} \times 360$ [= 160]	**1**	
	(b) 144	**1**	
	(c) Pie chart with at least 2 correct sectors **and** at least 2 sectors correctly labelled.	**2**	**B1** for a sector of 158° to 162° **or** 142° to 146° **or** 54° to 58°
16	**(a)** $\begin{pmatrix} 0 \\ 63 \end{pmatrix}$	**1, 1**	
	(b) $\begin{pmatrix} 7 \\ -8 \end{pmatrix}$	**1, 1**	
17	**(a)** 	**2**	**B1** for correct line, on each side of *AB* (longer than dash at *C*) **B1** for 2 pairs of intersecting arcs
		1	Intention to draw a full correct circle
	(b)	**1**	R shaded must be a closed region
18	**(a)** 3	**2**	**M1** for $\frac{10 - -2}{4(-0)}$ or better
	(b) [y =] $3x - 2$	**1 ft**	their **(a)** $x - 2$
	(c) [y =] $3x$	**1 ft**	follow through gradient from their **(b)** **or** their **(a)**
19	**(a)** 3.54	**3**	**M2** for $\sqrt{(7.4^2 - 6.5^2)}$ **or M1** for $7.4^2 = AD^2 + 6.5^2$ or better
	(b) 44.3	**2**	**M1** for sin [*BCD*] = $\frac{6.5}{9.3}$ or better
20	**(a)** 10	**1**	
	(b) 15 10	**1**	
	(c) 9 [km/h]	**2**	**M1** for $6 \div \frac{2}{3}$ **or** $6 \div 40$ or better
	(d) horizontal line from (15 10, 12) to (16 30, 12)	**1**	'their 16 30' + 50 minutes
	line from (16 30, 12) to (17 20, 0)	**1 ft**	

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