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.

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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	1	
	(b) obtuse	1	
4	(a) 29 000	1	
	(b) 60	1	
5	(a) 7	1	
	(b) 4.5 or $4\frac{1}{2}$	1	
6	-16	2	M1 for 4 × 6.5
7	8j-3k-8	2	B1 for two correct terms in final answer
	final answer		or for correct answer seen then spoilt
8	16	2	M1 for 768 ÷ 48
9	[0].852 or $\frac{23}{27}$	2	B1 for 85.56 or $\frac{2139}{25}$
10	(a) 2.3×10^5	1	
	(b) [0].00048	1	
11	$\frac{\frac{17}{9}}{\frac{5}{2}} \text{ or } \frac{17}{9} \div \frac{5}{2}$	M1	$\frac{\frac{34}{18}}{\frac{45}{18}} \text{ or } \frac{34}{18} \div \frac{45}{18}$
	$\frac{17}{9} \times \frac{2}{5} = \frac{34}{45}$	M1	$\frac{34}{18} \times \frac{18}{45} = \frac{34}{45}$
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	1	
	(b) $a^3 - 7a$ final answer	2	B1 for a^3 or $-7a$ in final answer or for correct answer seen then spoilt
14	(a) $\frac{24}{75}$ oe	1	
	(b) 84	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	2	B1 for a sector of 158° to 162° or 142° to 146°
	sectors and at least 2 sectors		or 54° to 58°
	correctly labelled.		
16	(a) $\begin{pmatrix} 0 \\ 63 \end{pmatrix}$	1, 1	
	(7)		
	(b) $\begin{pmatrix} 7 \\ -8 \end{pmatrix}$	1, 1	
17	(a)	2	B1 for correct line, on each side of <i>AB</i> (longer
			than dash at C)
	$\left(\begin{array}{c c} R \end{array}\right)$		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 $\frac{102}{4(-0)}$ or better
	(A) [12 2	1 6	1
	(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
			6.5
	(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
			3
	(d) horizontal line from (15 10, 12)	1	'their 16 30' + 50 minutes
	to (16 30, 12)		
	line from (16 30, 12) to (17 20, 0)	1 ft	
<u> </u>	1	<u> </u>	