CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0580 MATHEMATICS

0580/12 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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Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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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
soi seen or implied

Qu	Answers	Mark	Part Marks
1	0.65 cao	**1**	
2	343	**1**	
3	29	**1**	
4	10800	**1**	
5	cuboid	**1**	Accept [rectangular] prism.
6	Overlapping class intervals oe	**1**	
7 (a)	Any acute angle with angle indicated	**1**	
(b)	Obtuse	**1**	
8	10, 15	**1, 1**	If 10 not correct allow **SC1** for x, $x + 5$
9	0.25 oe	**2**	**M1** for 1– (0.45 + 0.3) or better or **SC1** for 0.52 as final answer
10 (a)	$\begin{pmatrix}24\\42\end{pmatrix}$	**1**	
(b)	$\begin{pmatrix}-1\\9\end{pmatrix}$	**1**	
11	10.5 www	**2**	**M1** for 42 = ½ × BC × 8 or better
12 (a)	5.17225...	**1**	
(b)	5.2	**1FT**	**FT** *their* (a)
13 (a)	108°	**1**	
(b)	3 × 108 ≠ 360 oe	**1**	
14	Enlargement [Centre] (5,4) [Scale factor] 3	**1** **1** **1**	

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Qu	Answers	Mark	Part Marks
15 (a)	52	**2**	**M1** for 180 – 128 or 128 or 52 marked on diagram in a correct position.
(b)	22	**1**	
16 (a)	3.844×10^5	**1**	
(b)	4.55×10^8	**2**	**B1** for figs 455 seen
17 (a)	<	**1**	
(b)	>	**1**	
(c)	<	**1**	
18 (a)	–4, –7, [+]5 in any order	**1**	
(b)	–22	**2**	**M1** for –10 and –12 seen **SC1** for –10 +12 seen
19	with 2 correct steps seen $\frac{18k}{35k}$	**3**	**B1** for $\frac{5k}{3k}$ and **M1** for $\frac{6}{7} \times \textit{their}\ \frac{3}{5}$
20 (a)	Angle or triangle [in a] semi-circle	**1**	
(b)	7.068 to 7.07	**2**	**M1** for $\pi \times 1.5^2$ seen
21	6632.55 cao final answer	**3**	**M2** for $6250 \times \left(1 + \frac{2}{100}\right)^3$ oe **or M1** for $6250 \times \left(1 + \frac{2}{100}\right)^2$ oe **SC2** for answer 382.55 final answer
22	14.5 oe	**3**	**M2** for complete correct method or **M1** for one correct step
23 (a)	1	**1**	
(b)	$[v =] \sqrt{\frac{2E}{m}}$ or $\sqrt{\frac{E}{0.5m}}$ or $\sqrt{\frac{E}{\frac{1}{2}m}}$	**3**	**M2** for $v^2 = \frac{2E}{m}$ **or M1** for $mv^2 = 2E$ or $\frac{1}{2} v^2 = \frac{E}{m}$

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Qu	Answers	Mark	Part Marks
24 (a) (i)	P in correct position at (– 5, – 2)	**1**	
(ii)	$y = 2x$ drawn	**1**	
(b) (i)	2	**1**	
(ii)	S rotated correctly	**2**	**SC1** if rotated 90acw or 90cw about wrong centre.

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