CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2014 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
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

Qu.	Part	Answers	Mark	Part Marks
1		4	**1**	
2		23 29	**1**	
3	**(a)**	138	**1**	
	(b)	Obtuse	**1**	
4	**(a)**	506 000	**1**	
	(b)	5.06×10^5	**1FT**	Follow through *their* part (a)
5	**(a)**	$\frac{5 \times 2}{20}$	**1**	
	(b)	0.5 or $\frac{1}{2}$ cao	**1**	
6		30	**2**	**M1** for $n - 8 = 22$ or $\frac{n}{2} = 15$
7		$\begin{pmatrix} 6 \\ -13 \end{pmatrix}$	**2**	**B1** for each component or for $\begin{pmatrix} -2 \\ 10 \end{pmatrix}$ or $\begin{pmatrix} 2 \\ -10 \end{pmatrix}$ seen
8		454.5 455.5	**1, 1**	**SC1** for both correct but reversed
9		$18\frac{1}{18}$	**2**	**M1** for $\frac{2}{36} + \frac{36}{2}$ or better
10		1.37	**2**	**B1** for 0.866… or $\frac{\sqrt{3}}{2}$ or 0.5 or $\frac{1}{2}$ or **B1** for 1.366… as final answer
11		6	**2**	**M1** for $720 = 8 \times 15 \times h$ or better

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12	**(a)**	Negative	**1**	
	(b)	More rain [suggests] lower temperature oe	**1**	
13		114 to 117	**2**	**B1** for 38 to 39 seen or 72 [mph]
14	**(a)**	74	**2**	**M1** Angle $B = 180 - 127$
	(b)	53	**1FT**	127 – *their* part (a)
15		1.6[0]	**3**	**M1** for 800×1.5 and **M1** for *their* $1200 \div 750$
16	**(a) (i)**	p^{10}	**1**	
	(ii)	t^{-3} or $\frac{1}{t^3}$	**1**	
	(b)	4	**1**	
17	**(a)**	Angle [in a] semi-circle	**1**	
	(b)	19.2 or 19.23 to 19.24	**2**	**M1** for $17^2 + 9^2$
18	**(a)**	$\frac{16}{5}$ and $\frac{21}{8}$ oe $\frac{128}{40} - \frac{105}{40}$ oe **or** $\frac{8 \times their\,16}{40} - \frac{5 \times their\,21}{40}$ oe with numerators evaluated	$\frac{8}{40}$ and $\frac{25}{40}$ oe $\frac{40}{40} + \frac{8}{40} - \frac{25}{40}$ oe	**M1** **M1**
	(b)	$\frac{7}{8} \times \frac{40}{23}$ oe $1\frac{12}{23}$ cao		**M1** **A1**
19	**(a) (i)**	40.3		**1**
	(ii)	−3.3		**2** **M1** for attempt at ordering seen
	(b)	$\frac{7}{12}$ oe isw		**1**

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20	**(a)**	119	**3**	**M2** for $18 \times 6 + 11$ oe or **B1** for 18 or 11 or 108
	(b)	[0]1 [00] pm cao	**1**	
21	**(a)**	177 or 176.7 to 176.74	**2**	**M1** for $\pi \times 7.5^2$
	(b)	4 correct lines of symmetry drawn	**2**	**B1** for 2 correct and no extra lines
22	**(a)**	52.6	**2**	**M1** for $\sin [\ ] = \frac{27}{34}$
	(b)	127 or 127.4[…]	**2FT**	180 – *their* part (a) **B1** for [*BAC* =] 90 − *their* part (a)

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