CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 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.	Part	Answers	Mark	Part Marks
1		121 042	**1**	
2		250	**1**	
3		86.7 or 86.74 to 86.75	**1**	
4	**(a)** **(b)**	42 000 10 381 cao	**1** **1**	
5	**(a)** **(b)**	2 Both lines drawn	**1** **1**	
6	**(a)** **(b)**	(4, 1) Point plotted at (–1, 3)	**1** **1**	
7		3a – 4b Final Answer	**2**	**B1** for answer $3a \pm jb$ **or** $ka - 4b$ or **SC1** for answer reached in working then spoilt
8		5.293 cao	**2**	**B1** for 5.29 **or** 5.292 **to** 5.2927
9		125	**2**	**B1** for 55 **or** 125 in any other correct position on diagram or **M1** for 180 – 55

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10		7.7	**2**	**M1** for $44 \times \frac{17.5}{100}$ oe
11	**(a)**	6561 cao	**1**	
	(b)	1	**1**	
12		4.8 oe	**2**	**M1** for $5 + 19 = 3x + 2x$ oe or better **or B1** $24 - 2x = 3x$ oe **or** $5 = 5x - 19$ oe
13		[Other angle could be] 84	**2**	**M1** for $180 - (48 + 48)$ or **SC1** shows that two angles of 66 are needed to make an isosceles triangle
14	**(a)**	$\frac{2}{6}$ oe	**1**	
	(b)	200 Final answer	**1FT**	FT 600 × *their* **(a)** providing *their* **(a)** is a probability
15		435, 445 cao	**2**	**B1** for one value in correct place or **SC1** for both values correct but reversed
16	**(a)**	4	**1**	
	(b)	7 nfww	**2**	**M1** for a correctly ordered list of at least 8 numbers
17		944 cao	**3**	**M1** for $800 \times 6 \times \frac{3}{100}$ oe **A1** for 144 **A1 FT Dependent** on M1 scored for *their* 144 + 800 evaluated
18	**(a)**	Ruled perpendicular line through *P*	**1**	± 2°
	(b)	Correct ruled line drawn with 2 correct sets of arcs	**2**	**B1** for correct line without correct arcs or for 2 sets of correct arcs with no line
19		6.6 cao	**3**	**M1** for $\sin 56 = \frac{h}{8}$ oe or better **A1** for 6.63..... **A1 FT Dependent** on M1 scored for their answer correctly rounded to 2sf

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20	**(a)**	$\begin{pmatrix}16\\12\end{pmatrix}$	**2**	**B1** for each correct component
	(b)	$\begin{pmatrix}-3\\5\end{pmatrix}$	**2**	**B1** for each correct component
21	**(a)**	$\frac{9}{12} - \frac{1}{12}$ oe	**M1**	Must be shown.
		[=] $\frac{8}{12}$ oe [=] $\frac{2}{3}$	**M1**	Both fractions must be shown
	(b)	$\frac{5}{2} \times \frac{4}{25}$ oe	**M1**	Must be shown
		Cancelling shown or $\frac{20}{50}$ oe [=] $\frac{2}{5}$	**M1**	**Dependent** and cancelling shown **or** a fraction and then $\frac{2}{5}$ must be shown
22	**(a)**	6b($a - 4c$) Final answer	**2**	**B1** for answer 6($ab - 4bc$) **or** 3b($2a - 8c$) **or** 2b($3a - 12c$) **or** b($6a - 24c$)
	(b)	n ($j + k$) or $nj + nk$ oe Final answer	**2**	**M1** for one correct step of a two-step method or **SC1** for [m] = $k + jn$ or [m] = j+ kn
23	**(a)**	**(i)** 11	**1**	
		(ii) subtract 4 oe	**1**	
	(b)	2, 6, 10 cao	**1**	
	(c)	$3n - 4$ oe	**2**	**B1** for answer $3n \pm k$, where k is an integer

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