UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0580 MATHEMATICS

0580/13 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.

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UNIVERSITY of CAMBRIDGE
International Examinations

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		40	**1**	
2		52 000	**1**	
3		11 109	**1**	
4	**(a)**	53	**1**	
	(b)	64	**1**	
5	**(a)**	<	**1**	
	(b)	=	**1**	
6		120	**2**	**M1** for $\frac{750\times2\times8}{100}$ oe seen or **SC1** 870 as final answer
7		95	**2**	**B1** for 85 seen or **M1** $x = 180$ – 'their angle ADC', if it is clearly seen
8	**(a)**	$\begin{pmatrix}-1\\5\end{pmatrix}$	**1**	
	(b)	$\begin{pmatrix}15\\-20\end{pmatrix}$	**1**	
9	**(a)**	1	**1**	
	(b)	b^{-2}	**1**	accept $\frac{1}{b^2}$
10		7 cao	**3**	**B1** for 39.5(0) or 31.5(0) or 42 **M1** for (their 39.5 – 8) ÷ 4.5 or (their 42 – 10.5) ÷ 4.5
11	**(a)**	isosceles	**1**	
	(b)	64	**1**	
	(c)	alternate (angle)	**1**	accept z angle

12		[x =] 5, [y =] –2	**3**	**M1** for consistent multiply and add/subtract as appropriate. Allow computational errors. Other methods allowed. **A1** for correct x or y.
13	**(a)**	6.4×10^{-4}	**1**	
	(b)	1.4×10^{3}	**2**	**M1** for 1400 or answer rounding to 1401 or 1.4×10^{k}
14	**(a)**	3	**1**	
	(b)	3.5	**2**	**M1** for at least 7 numbers in order and an attempt to find the middle number
	(c)	7	**1**	
15	**(a)**	$\frac{11}{12} - \frac{4}{12}$ oe $\frac{7}{12}$ **cao ww 0**	**2**	**M1** correct use of a common denominator **A1**
	(b)	$\frac{1}{4} \times \frac{13}{11}$ oe $\frac{13}{44}$ **cao ww 0**	**2**	**M1** inversion and operation change **A1**
16	**(a)**	7.2 oe	**2**	**M1** for $5x - 15 = 21$ or $x - 3 = \frac{21}{5}$
	(b)	[x =] $\frac{y+2}{3}$	**2**	**M1** for $3x = y + 2$ or $-3x = -2 - y$
17	**(a)**	112	**2**	**M1** Attempt to add 6 given and *their* 2 sides
	(b)	564	**2**	**M1** for $18 \times 34 - 12 \times 4$: $(612 - 48)$ or $(18 \times 12) + (14 \times 12) + (10 \times 18)$ or $(4 \times 12) + (10 \times 4) + (34 \times 14)$
18	**(a)**	71	**2**	**M1** for $7 \times 8 - 3 \times -5$ or **B1** 56 and –15
	(b)	$3v\,(u + 3w)$ final answer	**2**	**B1** for $3(uv + 3vw)$ or $v\,(3u + 9w)$ As final answer
19	**(a)**	332	**2**	**M1** for $BCA = 28$. Or 360 – 28 or 152 marked correctly at C or 180 + 152
	(b)	78.4	**2**	**M1** for $AB^2 = 74^2 + 26^2$ or better
20	**(a)**	[0].15 oe	**1**	
	(b)	**(i)** 0.12, 0.28, 0.44 oe	**2**	**M1** for division of 15, 35 or 55 by *their* 125 Or **B1** for 1 correct
		(ii) 128	**2**	**M1** for $800 \times$ [0].16