CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the March 2015 series

0580 MATHEMATICS

0580/12 Paper 1 (Paper 12 – 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	Answers	Mark	Part marks
1	71 072	**1**	
2	8	**1**	
3	332 or 330 to 334	**1**	
4	68	**1**	
5	191.27 cao	**1**	
6 (a)	$\frac{9}{11}$	**1**	
(b)	$\frac{73}{100}$	**1**	
7 (a)	0.28 oe	**1**	
(b)	144	**1**	
8 (a)	radius	**1**	
(b)	chord	**1**	
9 (a)	(8, –12)	**1**	
(b)	$\begin{pmatrix} 24 \\ -28 \end{pmatrix}$	**1**	
10	96	**2**	**B1** for $96k$ or $2^5 \times 3$ or for listing multiples of each up to 96
11	1230 or 1231 to 1232	**2**	**M1** for $\pi \times 7 \times 7 \times 8$ or better
12	102.6[0]	**2**	**M1** for $760 \times 3 \times \frac{4.5}{100}$ or better
13 (a) (i)	1	**1**	
(ii)	m^7	**1**	
(b)	2	**1**	

14	400 350 250	**3**	**M1** for $\frac{1000}{8+7+5}$ implied by 50 **A1** for one clearly assigned correct answer or **SC2** for 3 correct answers in wrong order
15 (a)	68	**1**	
(b) (i)	15	**2**	**M1** for $\frac{360}{n} = 24$ or $(n-2)180 = 156n$
(ii)	pentagon	**1**	
16	$\frac{25}{9}$	**B1**	(Alt) $\frac{25}{9}$
	$\frac{a}{b} \times \frac{6}{5}$ where $a > b$	**M1**	$\frac{their 25 \times 2}{9 \times 2} \div \frac{5 \times 3}{6 \times 3}$ oe
	Their $\frac{150}{45}$ oe or *their* correct full cancelling	**M1FT dep**	$\frac{their 25 \times 2}{5 \times 3}$ oe or $\frac{50}{18} \div \frac{15}{18}$ oe with 18's cancelled
	$\frac{10}{3}$ or $3\frac{1}{3}$ nfww	**A1**	
17 (a)	47	**1**	
(b)	36	**1**	
(c)	14	**1**	
(d)	130	**1**	
18 (a)	$[x =]$ 6.5 $[y =]$ 2.5	**2**	**B1** for $x = 6.5$ **B1** for $y = 2.5$ If zero scored, **SC1** for correct substitution and evaluation to find other variable or **SC1** no working, 2 correct answers given.
(b)	$7p(2p + 3q)$	**2**	**B1** for $7(2p^2 + 3pq)$ or $p(14p + 21q)$
19 (a)	$2c$	**1**	
	$2c + 3$	**1FT**	FT is *their* $2c + 3$ provided linear
(b)	$5c + 3$	**2FT**	**M1** for c + *their* $2c$ + *their*$(2c+3)$ provided linear

20 **(a)**	3.5	**1**	
(b)	straight line from (0,0) to (15,*their* 3.5)	**1FT**	**FT** from **(a)**
	horiz line from (*their* 15, *their* 3.5) to (*their* 33, *their* 3.5)	**1FT**	**FT** is horizontal line length 18 mins
	straight line from (*their* 33, *their* 3.5) to (*their* 33 + 12, 0)	**1FT**	**FT** is from (*their x*, *their y*) to (their x + 12, 0)
21 **(a)** **(i)**	reflection $x = 3$	**1** **1**	
(ii)	rotation [centre] (0,0) oe 180	**1** **1** **1**	
(b)	correct enlargement (−2, 0), (−4, 0), (−2, 6), (−4, 8)	**2**	**B1** for correct scale factor used, wrong centre