MARK SCHEME for the May/June 2015 series

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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2015 series for most Cambridge IGCSE®, Cambridge International A and AS Level components and some Cambridge O Level components.

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

Question		Answer	Mark	Part marks
1		700	1	
2		56	1	
3		$\dfrac{22}{25}$ cao	2	**M1** for $\dfrac{88}{100}$ oe seen
4		168	2	**M1** for $240 \div (7 + 3)$ or better
5		$3x(3x - 2)$ final answer	2	**B1** for $x(9x - 6)$ or $3(3x^2 - 2x)$
6		1350 1450	1, 1	If zero, award **SC1** for correct but reversed
7		66.4[2......]	2	**M1** for cos $[....=]$ $\dfrac{2}{5}$ oe
8	(a)	[+] 2	1	
	(b)	−6	1	
9	(a)	7.16[1…]	1	
	(b)	3.5 oe	1	
10	(a)	2.7×10^5	1	
	(b)	4.57×10^8	2	**M1** for $(6.4 \times 10^7 + 8.5 \times 10^8) \div 2$ or better If 0 scored **SC1** for figs 457 or 9.14×10^8
11		44 www	3	**M1** for angle $[EBC =] 360 - (82 + 102 + 64)$ oe or better **M1FT** for angle $ABE = 180 - $ '*their EBC*'
12	(a)	correct horizontal and vertical lines only	2	**B1** for one line only correct and no extras
	(b)	2	1	
13		1.60 cao	3	**B2** for 1.597… or 1.6 or **M1** for $2 \div 1.25^2$

14		$\dfrac{15}{8}$	B1	or $\dfrac{135}{72}$
		their $\dfrac{15}{8} \times \dfrac{9}{5}$ oe	M1	or $\dfrac{135}{72} \div \dfrac{40}{72}$ or equivalent division with fractions with common denominators
		$\dfrac{27}{8}$ or $3\dfrac{3}{8}$ cao	A1	
15		2.8 oe	3	**M2** for $12 + 2 = 8x - 3x$ or better or **M1** for $3x + 12$ or $8x - 2$
16		20.6 or 20.58 to 20.59	3	**M2** for $\dfrac{85-67.5}{85} \times 100$ or $\left(1 - \dfrac{67.5}{85}\right) \times 100$ or **M1** for $\dfrac{85-67.5}{85}$ or $\dfrac{67.5}{85} \times 100$ If zero scored **SC1** for $\dfrac{67.5-85}{85} \times 100$
17	(a)	1, 5	1	
	(b)	$\begin{pmatrix} 5 \\ -2 \end{pmatrix}$	1	
	(c)	$\begin{pmatrix} 6 \\ -1 \end{pmatrix}$	1	
	(d)	$\begin{pmatrix} -18 \\ 42 \end{pmatrix}$	1	
18	(a)	[0].85 final answer	2	**B1** for 0.853[5…] or 13.7 and 16.05 seen
	(b)	0.507 0.5077 $\dfrac{5}{9}$ 57%	2	**M1** for 3 in the correct order or **B1** for [0].57 and [0].55… or 0.56
19	(a)	67	1	
	(b)	2×3^3 oe	2	**B1** for a correct factor tree or 2,3,3,3 identified
	(c)	18 cao	2	**B1** for final answer of 2, 3, 6 or 9

20	(a)	2040 or 2036 or 2035.7 to 2036.1	2	**M1** for $\pi \times 6^2 \times 18$ If zero, **SC1** for answer of 8140 (after use of diameter)
	(b)(i)	1104	3	**M2** for $2 \times (20 \times 14 + 20 \times 8 + 8 \times 14)$ oe or **M1** for $20 \times 14 + 20 \times 8 + 8 \times 14$
	(ii)	*their* **(b)(i)** $\times$ 100	1FT	