

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

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.

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Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0580	13

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	$\frac{22}{25}$ cao	2	M1 for $\frac{88}{100}$ 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 $\cos [\dots =] \frac{2}{5}$ 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 $ABE = 180 - \text{'their } EBC\text{'}$
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 $2 \div 1.252$

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0580	13

14	$\frac{15}{8}$ <i>their</i> $\frac{15}{8} \times \frac{9}{5}$ oe $\frac{27}{8}$ or $3\frac{3}{8}$ cao	B1 M1 A1	or $\frac{135}{72}$ or $\frac{135}{72} \div \frac{40}{72}$ or equivalent division with fractions with common denominators
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 $\frac{85 - 67.5}{85} \times 100$ or $\left(1 - \frac{67.5}{85}\right) \times 100$ or M1 for $\frac{85 - 67.5}{85}$ or $\frac{67.5}{85} \times 100$ If zero scored SC1 for $\frac{67.5 - 85}{85} \times 100$
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 $\frac{5}{9}$ 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

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – May/June 2015	0580	13

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)	<i>their (b)(i)</i> $\times 100$	1FT	