

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the March 2016 series

0580 MATHEMATICS

0580/12

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the March 2016 series for most Cambridge IGCSE® and Cambridge International A and AS Level components.

© IGCSE is the registered trademark of Cambridge International Examinations.

Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – March 2016	0580	12

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	Answer	Mark	Part marks
1	17017	1	
2	5.04	1	
3	12.3	1	
4	93	1	
5	11	1	
6 (a)	6800	1	
(b)	6790	1	
7	$w = \frac{3y-7}{5}$ oe	2	M1 for $5w+7=3y$ or $5w-3y=-7$ or $w-\frac{3y}{5}+\frac{7}{5}=0$
8 (a)	-4	1	
(b)	154	1	
9 (a)	$\frac{2}{3}$ oe	1	
(b)	66 cao	1	
10	23.85%, $\sqrt{0.057}$, 0.239, $\frac{11}{46}$	2	M1 for $\sqrt{0.057} = 0.2387\dots$ and $\frac{11}{46} = 0.2391\dots$ or for 3 in correct order
11	x^8y^7 final answer	2	B1 for answer x^8y^k or x^ky^7 ($k \neq 0$)
12 (a)	1	1	
(b)	cannot be written as a fraction oe	1	

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – March 2016	0580	12

Qu	Answer	Mark	Part marks
13	9.1 oe	2	M1 for $\frac{5.2}{PQ} = \frac{12.4}{21.7}$ oe
14 (a)	$\begin{pmatrix} -1 \\ 5 \end{pmatrix}$	1	
(b)	H marked at (-3,-3)	1	
15	75.1 or 75.09 to 75.10	2	M1 for $\cos [\dots] = \frac{0.9}{3.5}$
16	$y = 3x - 1$	3	M2 for $[y =]3x + c$ M1 for rise/run If zero scored, SC1 for $[y =]kx - 1$
17 (a)	47	1	
(b)	117	2	M1 for $360 - (115 + 85 + 97)$
18	$\frac{35(\text{or } 95)}{60} + \frac{39}{60}$ $2\frac{7}{30}$	M1 A2	accept $\frac{35k(\text{or } 95k)}{60k} + \frac{39k}{60k}$ or A1 for $\frac{67}{30}$ or $\frac{134k}{60k}$ or $1\frac{74k}{60k}$ or $2\frac{14k}{60k}$
19 (a)	35	1	
(b)	64	1	
(c)	19	1	
20 (a)	65	1	
(b)	$6n + 29$ oe	2	M1 for $6n + c$ or $kn + 29, k \neq 0$
21 (a)	$6x(3x - 4)$ final answer	2	M1 for $6(3x^2 - 4x)$ or $x(18x - 24)$ or $2x(9x - 12)$ or $3x(6x - 8)$ or $2(9x^2 - 12x)$ or $3(6x^2 - 8x)$
(b)	$3x^2 - 4x$ final answer	2	M1 for $3x^2 - kx$ or $kx^2 - 4x$ or correct answer seen and then spoilt

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – March 2016	0580	12

Qu	Answer	Mark	Part marks
22 (a)	$2^5 \times 3^2 \times 7$ oe final answer	3	B2 for product of two of $2^5, 3^2, 7$ or B1 for 2, 3 and 7 seen or M1 for 2×1008 or 3×672 or 7×288 soi
(b)	2.016×10^3	1	
23 (a)	7	1	
(b)	2	1	
(c)	5	2	M1 for correctly ordering at least first 5 or last 5 numbers from list
24 (a)	120	2	M1 for $\frac{41}{123} \times [360]$ oe or $\frac{123}{41}$
(b)	25 cao	2	B1 for 75