



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

MATHEMATICS

0580/11

Paper 1 (Core)

October/November 2016

MARK SCHEME

Maximum Mark: 56

Published

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 October/November 2016 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

© IGCSE is the registered trademark of Cambridge International Examinations.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **5** printed pages.

Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0580	11

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	Thirty million[s]	1	
2	-7	1	
3	$\frac{1}{8}$ cao	1	
4 (a)	[0].0402	1	
(b)	[0].040	1	
5	Fully correct triangle with correct arcs	2	B1 for correct triangle without arcs or for correct position of arcs If zero scored, SC1 for fully correct reversed triangle with arcs ie $AB = 6$ cm and $AC = 7$ cm or for triangle with only one of AB or AC correct length with suitable arcs
6	$\sqrt{0.33}$, 58%, $\frac{18}{31}$, $\frac{7}{12}$, 0.59	2	B1 for 4 in correct order or M1 for 3 of the following or better 0.583..., 0.574..., 0.58, 0.5806.. or 58.5%, 57.4%, 58.06%, 59%
7	$\begin{pmatrix} 12 \\ -16 \end{pmatrix}$	2	B1 for one correct component or for $\begin{pmatrix} 10 \\ -12 \end{pmatrix}$ seen

Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0580	11

8	$\frac{8}{12}$ and $\frac{3}{12}$ oe	M1	Correct fractions with common denominator
	$\frac{5}{12}$ cao	A1	
9	50.3 or 50.26 to 50.272	2	M1 for $2 \times \pi \times 8$ oe
10	216	2	M1 for $48 \div 2 [\times 9]$
11 (a)	E	1	
(b)	0 or zero	1	
12 (a)	Positive	1	
(b)	Zero oe	1	
13 (a)	8	1	M1 for ordered list of at least the first 6 or last 6 values provided any following work is an attempt at the median
(b)	6	2	
14 (a)	72	1	
(b)	6	1	
(c)	17	1	
15	Correctly eliminating one variable [x =] -1 and [y =] 5	M1 A1 A1	If zero scored, SC1 for 2 values that satisfy one of the original equations or SC1 if no working shown, but 2 correct answers given

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0580	11

16	(a)	Accurate arc, centre B , radius 5cm meeting both BA and BC	1	B1 for accurate line from B to at least AC or M1 for correct arcs	
	(b)	Accurate bisector through angle B with 2 pairs of correct arcs and reaching to at least AC	2		
	(c)	Correct region identified	1		
					
17		24.9 or 24.925 or 24.9[24...]	3	M2 for $[x =] \frac{15}{\sin 37}$ or $[x =] \frac{15}{\cos 53}$ or M1 for $\sin [37 =] \frac{15}{x}$ or $x \sin 37 = 15$ oe	
18	(a)	$6n + 1$ oe final answer	2	B1 for $6n + c$ or for $kn + 1, (k \neq 0)$	
	(b)	$(n + 2)^2$ final answer	2	M1 for any quadratic expression or reaching second difference of 2	
19	(a)	54	1	Independent mark	
	(b)	61	1		
		Angle[s] [in a] triangle [add to] 180	1		
	(c)	(i)	48		1
		(ii)	42		1

Page 5	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0580	11

20	(a) (1, 4) (b) Point plotted at (5, -2) (c) Isosceles (d) $\begin{pmatrix} -4 \\ -6 \end{pmatrix}$ (e) (-5, 3)	1 1 1FT 1 1	Strict FT of <i>their</i> (b)
21	(a) 2 (b) $[x =] \sqrt{\frac{y+2}{4}}$ or $\sqrt{(y+2)/4}$ or $\frac{\sqrt{y+2}}{2}$ oe final answer	2 3	M1 for one correct step e.g. $4x = 11 - 3$ or $x + \frac{3}{4} = \frac{11}{4}$ or better M1 for one correct step e.g. $y + 2 = 4x^2$ or $\frac{y}{4} = x^2 - \frac{2}{4}$ M1 for a further correct step e.g. $\frac{y+2}{4} = x^2$ or $\frac{y}{4} + \frac{2}{4} = x^2$