



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

---

**MATHEMATICS**

**0580/13**

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<sup>®</sup>, 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 **4** printed pages.

© UCLES 2016



**[Turn over**

<b>Page 2</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2016</b>	<b>0580</b>	<b>13</b>

### 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	5 034	1	
2	-3	1	
3	36	1	
4	$n^7$ final answer	1	
5	947.5, 948.5	2	<b>B1</b> for either or both correct but reversed
6 (a)	$2.47 \times 10^6$	1	
(b)	$7.9 \times 10^{-3}$	1	
7	$0.4^2$ $0.6^3$ $0.22$ $\sqrt{0.09}$	2	<b>M1</b> for decimal conversion 0.216 and 0.3 and 0.16
8	Thursday	2	<b>M1</b> for 5.4 found or at least two of: 3.8, 3.6 and 4 found
9 (a)	$A$	1	
(b)	A ruled line joining (65, 23) to (80, 28)	1	
10	$\frac{18}{30}$ and $\frac{5}{30}$ oe must be shown	<b>M1</b>	$\frac{18k}{30k}$ and $\frac{5k}{30k}$
	$\frac{23}{30}$ cao	<b>A1</b>	
11	40	2	<b>M1</b> for $\frac{x}{16} = \frac{30}{12}$ or $\frac{x}{30} = \frac{16}{12}$ oe or 2.5 or 0.4 or 1.33[3...] or $\frac{16}{12}$
12 (a)	18.3	1	
(b)	128	1	

<b>Page 3</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2016</b>	<b>0580</b>	<b>13</b>

<b>Question</b>	<b>Answer</b>	<b>Mark</b>	<b>Part marks</b>
<b>13 (a)</b>	172	<b>1</b>	
<b>(b)</b>	166	<b>2</b>	<b>M1</b> for an ordered list of at least 5 numbers or <b>B1</b> for 164 and 168 identified
<b>14 (a)</b>	0.6	<b>1</b>	
<b>(b)</b>	$\frac{12}{25}$	<b>2</b>	<b>B1</b> for $\frac{48}{100}$ or equivalent fraction
<b>15 (a)</b>	2644.32	<b>1</b>	
<b>(b)</b>	133.42	<b>2</b>	<b>M1</b> for $4200 \div 31.48$
<b>16 (a) (i)</b>	$\frac{5}{12}$ oe	<b>1</b>	
<b>(ii)</b>	0	<b>1</b>	
<b>(b)</b>	[0].65 oe	<b>1</b>	
<b>17</b>	36	<b>3</b>	<b>M2</b> for $5 \times 3 + 7.5 + 9.5 + 4$ oe or <b>M1</b> for two of 5, 7.5, 9.5 and 4
<b>18 (a)</b>	$\begin{pmatrix} 2 \\ 1 \end{pmatrix}$	<b>1</b>	
<b>(b)</b>	$\begin{pmatrix} 2 \\ 4 \end{pmatrix}$	<b>1</b>	
<b>(c)</b>	(6, 10)	<b>1</b>	
<b>19 (a)</b>	30	<b>1</b>	
<b>(b)</b>	47.5	<b>2</b>	<b>M1</b> for $4.5 \times 5$ oe
<b>20 (a)</b>	68	<b>1</b>	
<b>(b)</b>	9	<b>2</b>	<b>M1</b> for $360 \div 40$ oe or $\frac{180(n-2)}{n} = 140$ oe

<b>Page 4</b>	<b>Mark Scheme</b>	<b>Syllabus</b>	<b>Paper</b>
	<b>Cambridge IGCSE – October/November 2016</b>	<b>0580</b>	<b>13</b>

<b>Question</b>	<b>Answer</b>	<b>Mark</b>	<b>Part marks</b>
<b>21 (a)</b>	Three correct, ruled lines	<b>2</b>	<b>B1</b> for two correct lines
<b>(b) (i)</b>	Drawing a rectangle or rhombus	<b>1</b>	
<b>(ii)</b>	FT their quadrilateral in <b>(b)(i)</b>	<b>1</b>	
<b>22 (a)</b>	40.2 or 40.21 to 40.22	<b>2</b>	<b>M1</b> for $2 \times \pi \times 6.4$ oe
<b>(b)</b>	1540 or 1544 or 1544.1 to 1544.4	<b>2</b>	<b>M1</b> for $\pi \times 6.4^2 \times 12$
<b>23</b>	$[x =] 5$ $[y =] -2$	<b>4</b>	<p><b>M1</b> for correctly equating one set of coefficients</p> <p><b>M1</b> for correct method to eliminate one variable</p> <p><b>A1</b> for <math>x = 5</math></p> <p><b>A1</b> for <math>y = -2</math></p> <p>If zero scored, <b>SC1</b> for 2 values satisfying one of the original equations.</p> <p>or</p> <p><b>SC1</b> if no working shown, but 2 correct answers given</p>