



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

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**MATHEMATICS**

**0580/13**

Paper 1 (Core)

**October/November 2016**

MARK SCHEME

Maximum Mark: 56

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**Published**

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

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<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

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<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>