

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

## **MARK SCHEME for the October/November 2015 series**

### **0580 MATHEMATICS**

**0580/12**

Paper 1 (Core), maximum raw mark 56

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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
1	17	1	
2	Parallelogram	1	
3	$\sqrt{3}$	1	
4	$[0.3=]\frac{3}{10}$ and $[\frac{1}{3}=]\frac{3}{9}$ or $\frac{1}{3} = 0.33[3\dots]$	1	
5 (a)	1426.31 cao	1	
(b)	1400 cao	1	
6	520 final answer	2	M1 for $2600 \times 5 \times \frac{4}{100}$ oe
7	694 or 694.4[4...]	2	M1 for $950 \div 1.368$
8	12	2	M1 for $\frac{7.2}{x} = \frac{15}{25}$ oe or better eg $7.2 \times \frac{25}{15}$
9	$4n - 5$ oe	2	M1 for $4n + k$ or for $jn - 5$ ( $j \neq 0$ )
10	48.7 or 48.70....	2	M1 for $\sin[=]\frac{14.5}{19.3}$ oe
11 (a)	6 cao	1	
(b)	12 final answer	1	
12 (a)	$\begin{pmatrix} 6 \\ -3 \end{pmatrix}$	1	
(b)	$\begin{pmatrix} -5 \\ 7 \end{pmatrix}$	1	

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Question	Answer	Mark	Part marks
13	$[y =] \frac{4R}{t}$	2	<b>M1</b> for a correct first step: $4R = ty$ or $\frac{R}{t} = \frac{1}{4}y$
14 (a)	62.5[%]	1	
(b)	130.35 cao	1	
15	correct triangle with correct arcs	2	<b>B1</b> for correct triangle without arcs or 1 correct side with arcs
16	10.96 cao	3	<b>M2</b> for $4 \times 1.27 + 3.5 \times 1.68$ or <b>M1</b> for $4 \times 1.27$ or $3.5 \times 1.68$
17	54	3	<b>M2</b> for $14.4 \times \frac{15}{4}$ oe or <b>M1</b> for $14.4 \div 4$ or $\frac{4}{15}$ associated with 14.4  If zero scored <b>SC1</b> for final answer 19.6[4]
18	3.5 nfw	3	<b>M1</b> for $\Sigma fx$ soi  <b>M1</b> (dep) for $\div 24$
19	6.24 or 6.244 to 6.245	3	<b>M2</b> for $\sqrt{8^2 - 5^2}$ or <b>M1</b> for $8^2 = 5^2 + x^2$ or better
20	$2\frac{3}{12}$ or $1\frac{15}{12}$ or $\frac{27}{12}$ or $\frac{9 \times 3}{4 \times 3}$  <i>their</i> $(\frac{27}{12} - \frac{11}{12} = \frac{16}{12})$ oe  $1\frac{1}{3}$ or $\frac{4}{3}$ cao	<b>M1</b>  <b>M1</b>  <b>A1</b>	Accept any correct conversion with common denominator $12k$  Correct resolving of <i>their</i> subtraction with denominator $12k$ showing full working  Working and then simplified answer must both be seen
21	3, 3, 6, 7, 8	3	<b>B2</b> for <b>two</b> of: 5 numbers with mode 3 5 numbers with median 6 5 numbers with range 5 or <b>B1</b> for <b>one</b> of them
22 (a)	44 to 48	1	
(b)	507 or 506.7 to 506.8	2	<b>M1</b> for $\pi \times 12.7^2$

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>	<b>Part marks</b>
<b>23 (a)</b>	$-8w + 20$ final answer	<b>1</b>	
<b>(b)</b>	$x(6x - 1)$	<b>1</b>	
<b>(c)</b>	28	<b>2</b>	<b>M1</b> for $2 \times 7 \times 5 + 3 \times 7 \times (-2)$ or for 70 or $-42$ seen
<b>24 (a)</b>	111 to 115	<b>1</b>	
<b>(b)</b>	304 to 320	<b>2</b>	<b>B1</b> for 7.6 to 8.0
<b>(c)</b>	[0]56 cao	<b>2</b>	<b>M1</b> for 236–180 oe