

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

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

### **0580 MATHEMATICS**

**0580/13**

Paper 1 (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
<b>1</b>	6054	<b>1</b>	
<b>2</b>	6.7	<b>1</b>	
<b>3</b>	3	<b>1</b>	
<b>4</b>	170 cao	<b>1</b>	
<b>5</b>	[0].101 or [0].1005 to [0].1006	<b>1</b>	
<b>6</b>	6	<b>1</b>	
<b>7 (a)</b>	12, 15	<b>1</b>	
<b>(b)</b>	11, 13	<b>1</b>	
<b>8 (a)</b>	5	<b>1</b>	
<b>(b)</b>	Subtract 4 oe	<b>1</b>	
<b>9</b>	5 – u final answer	<b>2</b>	<b>B1</b> for 5 + ku or j – u, k ≠ 0 as final answer
<b>10 (a)</b>	2	<b>1</b>	
<b>(b)</b>	–9	<b>1</b>	
<b>11</b>	23.6 or 23.57 to 23.58	<b>2</b>	<b>M1</b> for sin [=] $\frac{2}{5}$ oe
<b>12</b>	2 <sup>3</sup> × 3 <sup>2</sup> or 2 × 2 × 2 × 3 × 3	<b>2</b>	<b>B1</b> for 2, 2, 2, 3, 3
<b>13</b>	31.6 [2....]	<b>2</b>	<b>M1</b> for $\sqrt{18^2 + 26^2}$
<b>14</b>	Correct triangle with correct arcs	<b>2</b>	<b>B1</b> for correct triangle without arcs or 1 correct side with arcs
<b>15</b>	562.5 cm <sup>3</sup>	<b>2</b> <b>1</b>	<b>M1</b> for 5 × 12.5 × 9
<b>16</b>	Any two of $\frac{8}{12}$ , $\frac{2}{12}$ or $\frac{3}{12}$ oe  $\frac{8}{12} + \frac{2}{12} - \frac{3}{12}$ oe  $\frac{7}{12}$	<b>M1</b>  <b>M1</b>  <b>A1</b>	<b>M1</b> for any 2 correct over a common denominator, eg $\frac{4}{6}$ and $\frac{1}{6}$  or <b>SC2</b> for final answer $\frac{13}{12}$ or $1\frac{1}{12}$ with full working
<b>17 (a)</b>	3x + 21 final answer	<b>1</b>	
<b>(b)</b>	2x (1 – 2x) final answer	<b>2</b>	<b>B1</b> for 2(x – 2x <sup>2</sup> ) or x(2 – 4x) as final answer

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<b>Question</b>	<b>Answer</b>	<b>Mark</b>	<b>Part marks</b>
<b>18 (a)</b>	230	<b>1</b>	
<b>(b)</b>	C marked in correct position	<b>2</b>	<b>B1</b> for correct distance 8 cm or correct bearing 155°
<b>19 (a)</b>	[0].00017	<b>1</b>	
<b>(b)</b>	$1.026 \times 10^{-3}$	<b>2</b>	<b>B1</b> for $10.26 \times 10^{-4}$ oe
<b>20 (a)</b>	96	<b>2</b>	<b>M1</b> for $360 - (66 + 98 + 112)$
<b>(b)</b>	4140	<b>2</b>	<b>M1</b> for $(25 - 2) \times 180$ or $25 \times \left(180 - \frac{360}{25}\right)$
<b>21 (a)</b>	12 nfw	<b>2</b>	<b>M1</b> for $\frac{x}{7.5} = \frac{10}{6.25}$ oe
<b>(b)</b>	3.75 cao	<b>2</b>	<b>M1</b> for $\frac{y}{6} = \frac{6.25}{10}$ oe
<b>22</b>	Correctly equating one set of coefficients	<b>M1</b>	eg $10x + 4y = 16$ and $10x - 15y = 130$ or $15x + 6y = 24$ and $4x - 6y = 52$
	Correct method to eliminate one variable	<b>M1</b>	eg $19y = k$ or $hx = 114$ or $19x = m$ or $ny = 76$
	[x =] 4	<b>A1</b>	
	[y =] -6	<b>A1</b>	
			If zero scored <b>SC1</b> for 2 values satisfying one of the original equations. <b>SC1</b> if no working shown, but 2 correct answers given
<b>23 (a) (i)</b>	60	<b>1</b>	
<b>(ii)</b>	$\frac{90}{360}$ oe	<b>1</b>	
<b>(iii)</b>	46	<b>2</b>	<b>M1</b> for $\frac{138}{360} \times 120$
<b>(b)</b>	2.4 nfw	<b>3</b>	<b>M1</b> for $(0 \times 3) + (1 \times 3) + (2 \times 8) + (3 \times 5) + (4 \times 4) + (5 \times 2)$ implied by 60 <b>M1dep</b> for <i>their</i> $60 \div 25$