

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 | M1 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 | B1 for correct triangle without arcs or 1 correct side with arcs |
| 16 | 10.96 cao | 3 | M2 for $4 \times 1.27 + 3.5 \times 1.68$ or M1 for 4×1.27 or 3.5×1.68 |
| 17 | 54 | 3 | M2 for $14.4 \times \frac{15}{4}$ oe or M1 for $14.4 \div 4$ or $\frac{4}{15}$ associated with 14.4 If zero scored SC1 for final answer 19.6[4] |
| 18 | 3.5 nfw | 3 | M1 for Σfx soi M1 (dep) for $\div 24$ |
| 19 | 6.24 or 6.244 to 6.245 | 3 | M2 for $\sqrt{8^2 - 5^2}$ or M1 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 | M1 M1 A1 | 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 | B2 for two of: 5 numbers with mode 3 5 numbers with median 6 5 numbers with range 5 or B1 for one of them |
| 22 (a) | 44 to 48 | 1 | |
| (b) | 507 or 506.7 to 506.8 | 2 | M1 for $\pi \times 12.7^2$ |

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