



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

MATHEMATICS

0580/11

Paper 1 Core

May/June 2016

MARK SCHEME

Maximum Mark: 56

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 |
|--------------|---|----------|--|
| 1 | 8(h) 52 (min) | 1 | |
| 2 | 3.75 or $3\frac{3}{4}$ | 1 | |
| 3 | [0].72 oe | 1 | |
| 4 | [0].00127 | 1 | |
| 5 | 60 | 1 | |
| 6 | 157 900 cao | 2 | B1 for 158 000 or 157 860 or 157 862 to 157 863 If zero scored, SC1 for <i>their</i> answer to more than 4 figs correctly rounded to 4 sf |
| 7 (a) | Acute | 1 | |
| (b) | Pentagon | 1 | |
| 8 (a) | $\begin{pmatrix} -6 \\ 4 \end{pmatrix}$ | 1 | |
| (b) | $\begin{pmatrix} 10 \\ -40 \end{pmatrix}$ | 1 | |
| 9 (a) | 3 | 1 | |
| (b) | All three correct lines of symmetry drawn | 1 | |
| 10 | 393 | 2 | B1 for 393.1 to 393.2 or M1 for $2000 \div 5.087$ |
| 11 | 144 | 2 | M1 for finding a correct product of prime factors or correctly listing a minimum of 3 multiples of 36 and 48 or for answer $2^4 \times 3^2$ oe or $144k$ |
| 12 | 11 | 2 | M1 for $-2 \times -7 - 3$ soi |

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| Question | Answer | Mark | Part marks |
|----------|---|--|---|
| 13 | $\frac{py}{q}$ final answer | 2 | M1 for one correct step |
| 14 | [a =] 70 [b =] 40 | 2 | B1 for each |
| 15 | 21 | 2 | M1 for $\frac{15}{6}$ oe or $\frac{6}{15}$ oe or $\frac{8.4}{6}$ or $\frac{6}{8.4}$ |
| 16 | $\frac{6}{7} \times \frac{3}{5}$ or $\frac{18}{21} \div \frac{35}{21}$ oe $\frac{18}{35}$ cao | M2 A1 | B1 for $\frac{5}{3}$ oe or M1 for $\frac{6}{7} \times$ <i>their</i> $\frac{3}{5}$ |
| 17 (a) | 19 | 1 | |
| (b) | -2 | 1 | |
| (c) | 81 | 1 | |
| 18 (a) | Negative | 1 | |
| (b) | 4 | 1 | |
| (c) (i) | Ruled line of best fit | 1 | |
| (ii) | 250 000 to 380 000 | 1 | |
| 19 (a) | Correct ruled angle bisector with all correct arcs | 2 | M1 for accurate angle bisector with no / wrong arcs or for all correct arcs with no / wrong line |
| (b) | Correct ruled perpendicular bisector with two pairs of correct arcs | 2 | M1 for accurate bisector with no / wrong arcs or for two pairs of correct intersecting arcs with no / wrong line |
| 20 | Correctly equating one set of coefficients Correct method to eliminate one variable [x =] -3 [y =] 7 | M1 M1 A1 A1 | Dependent on first M1 scored If zero scored, SC1 for 2 values satisfying one of the original equations or 2 correct answers given but no working shown |

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| Question | Answer | Mark | Part marks |
|-------------------|------------------------------|-------------|---|
| 21 (a) (i) | 0, 1 | 1 | |
| (ii) | 2 | 2 | M1 for a correct rise ÷ run e.g. $4 \div 2$ or for right-angled triangle marked on graph with run = 1 and rise = 2 oe |
| (iii) | [y =] $2x + 1$ final answer | 2FT | FT <i>their</i> (a)(i) for c and <i>their</i> (a)(ii) for m B1 for $y = 2x + c$ ($c \neq 1$) or $y = mx + 1$ ($m \neq 2$ or 0) |
| (b) | $y = 5x + c$ oe final answer | 1 | where $c \neq -3$ |
| 22 (a) | 672 | 2 | M1 for $12 \times 8 \times 7$ |
| (b) | 12.5 | 2 | M1 for $675 \div (6 \times 9)$ |
| (c) | 540 | 3 | M2 for $(5 \times 9 \times 24) \div 2$ oe or M1 for $(5 \times 9) \div 2$ or 22.5 seen |