



MATHEMATICS

0580/13

Paper 1 (Core)

October/November 2017

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 |
| nfw | not from wrong working |
| soi | seen or implied |

| Question | Answer | Marks | Partial marks |
|----------|--|-----------|---|
| 1 | 2h 32 min | 1 | |
| 2 | 84 | 1 | |
| 3 | Kite | 1 | |
| 4 | y^9 | 1 | |
| 5(a) | 0.16 | 1 | |
| 5(b) | 0.06 0.078 0.42 0.5 | 1 | |
| 6(a) | Yellow | 1 | |
| 6(b) | $\frac{3}{16}$ or 0.1875 or 18.75% | 1 | |
| 7 | 0.25 $\frac{8}{10}$ oe 80 | 2 | B1 for two correct |
| 8 | $\begin{pmatrix} 11 \\ -7 \end{pmatrix}$ | 2 | B1 for $\begin{pmatrix} 11 \\ k \end{pmatrix}$ or $\begin{pmatrix} k \\ -7 \end{pmatrix}$ or $\begin{pmatrix} 15 \\ -5 \end{pmatrix}$ seen |
| 9 | $[x =] 5$ | 2 | M1 for $5x - 2x = 19 - 4$ or better |
| 10 | $\frac{60 \times 2}{2 + 4}$ | M1 | Allow 1 error |
| | 20 | A1 | Dep on no errors in rounding |
| 11 | 120 | 2 | M1 for $\frac{6}{40} [\times 800]$ or $\frac{800}{40} [\times 6]$ oe |
| 12 | 1263.21 | 2 | M1 for $1200 \times \left(\frac{100 + 2.6}{100}\right)^2$ oe |

| Question | Answer | Marks | Partial marks |
|-----------|--|-----------|--|
| 13(a) | Moscow | 1 | |
| 13(b) | 8 | 1 | |
| 13(c) | -7 | 1 | |
| 14(a) | Frequencies 4, 5, 6, 3, 2 cao | 2 | B1 for 3 or 4 correct in frequency column or for fully correct tally if no frequencies |
| 14(b) | 100 to 109 | 1 | FT <i>their</i> frequency table |
| 15 | 150 | 3 | M2 for $(12 - 2) \times 180 \div 12$ or $180 - 360 \div 12$ or M1 for $(12 - 2) \times 180$ or $360 \div 12$ soi 30 |
| 16 | $\frac{22}{7}$ or $\frac{5}{4}$ $2\frac{1}{7} - \frac{1}{4}$ | B1 | Allow $\frac{22k}{7k}$ or $\frac{5k}{4k}$ Correct step for dealing with mixed numbers |
| | $\frac{88}{28}$ or $\frac{35}{28}$ $2\frac{4}{28}$ or $\frac{7}{28}$ | M1 | Correct method to find common denominator e.g. $3\frac{4}{28}$ or $1\frac{7}{28}$ |
| | $1\frac{25}{28}$ $1\frac{25}{28}$ | A1 | |
| 17 | 10.9 or 10.91 ... | 3 | M2 for $[BC =] \frac{8.6}{\sin 52}$ or M1 for $\sin 52 = \frac{8.6}{BC}$ oe |
| 18(a) | 18 000 | 1 | |
| 18(b) | 2.15×10^6 | 2 | B1 for answer figs 215 or correct answer not in standard form |
| 19(a) | Ruled line through (0, 0) and (100, 60) | 2 | B1 for (100, 60) plotted |
| 19(b)(i) | 82 to 86 | 1 | |
| 19(b)(ii) | 31 to 35 | 1 | |
| 20(a)(i) | 34 | 1 | |
| 20(a)(ii) | Add 6 oe | 1 | |
| 20(b) | $3n + 8$ oe | 2 | B1 for $3n + k$ |

| Question | Answer | Marks | Partial marks |
|----------|--|-------|--|
| 21(a) | 168 | 2 | B1 for 8.4 seen |
| 21(b) | [0]74 | 1 | |
| 21(c) | Correct angle bisector with correct arcs meeting <i>AB</i> | 2 | B1 for correct bisector with wrong / no arcs |
| 22 | 139 or 139.2 to 139.3 | 4 | M3 for $10^2 + \frac{1}{2} \times \pi \times 5^2$ or M2 for $\frac{1}{2} \times \pi \times 5^2$ or M1 for radius = 5 or [area of square] 10^2 |
| | cm ² | 1 | |