

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series

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| 0581 MATHEMATICS | |
| 0581/12 | Paper 1 (Core), maximum raw mark 56 |

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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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 |

| Qu. | Answer | Mark | Part marks |
|--------|---|------|---|
| 1 | $6 + 5 \times (10 - 8) = 16$ | 1 | One pair of brackets only |
| 2 | 20 | 1 | |
| 3 | 8 | 1 | |
| 4 (a) | 5 and -3 or -5 and 3 or 1 and -15 or -1 and 15 | 1 | |
| (b) | 60 | 1 | |
| 5 | 729 | 2 | B1 for 81 or $\frac{1}{9}$ seen in the working or 0.111..... or B1 for 3^6 in the working or on the answer line. |
| 6 | 95.55 95.65 | 1, 1 | If zero, SC1 for both correct but reversed or 955.5 [mm] and 956.5 [mm] in correct place |
| 7 (a) | 3 6 15 | 1 | |
| (b) | 2 3 5 cao | 1 | |
| 8 (a) | 6.4×10^5 | 1 | |
| (b) | [0].000782 | 1 | |
| 9 | $\frac{3x-8}{5}$ oe | 2 | B1 for $5y = 3x - 8$ or $-5y = 8 - 3x$ If B0 SC1 for $\frac{3x+8}{5}$ or $\frac{-3x-8}{5}$ |
| 10 (a) | $\begin{pmatrix} -5 \\ 4 \end{pmatrix}$ | 1 | |
| (b) | $\begin{pmatrix} -15 \\ 12 \end{pmatrix}$ | 1FT | FT for $3 \times$ their (a) |
| 11 | 40.4% $\frac{17}{42}$ $\frac{15}{37}$ 0.41 | 2 | B1 for 3 in correct order or for 0.405....., 0.404 and 0.4047.... or 0.4048 |

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| 12 (a) | $2k$ | 1 | |
| (b) | -1 | 2 | B1 for -16 or -15 or 15 seen in the working. |
| 13 (a) | 700 | 2 | M1 for 2800×0.325 |
| (b) | 0.28 | 1 | |
| 14 | $\frac{7}{6}$ oe their $\frac{7}{6} \times \frac{8}{7}$ oe $\frac{4}{3}$ or $1\frac{1}{3}$ cao must see working | B1 M1 A1 | Or M1 for $\frac{56}{48} \div \frac{42}{48}$ or equivalent division with fractions with common denominators cancelled |
| 15 | $[x =] 2$ $[y =] -5$ | 3 | M1 for correct method to eliminate one variable A1 for x A1 for y If zero scored SC1 for correct substitution and evaluation to find the other variable. |
| 16 (a) | $\frac{136}{360}$ oe | 1 | |
| (b) | 19 cao | 3 | B1 for 76 M1 for $\frac{their 76}{360} \times 90$ |
| 17 (a) | 4 points correctly plotted | 2 | B1 for 3 correct |
| (b) | Correct ruled line of best fit | 1 | |
| (c) | Positive | 1 | |
| 18 (a) | 9 cao | 1 | |
| (b) | 15 and -15 | 1, 1 | |
| (c) | Any multiple of 18 | 1 | |
| (d) | 16 | 1 | |
| 19 (a) | $[x =] 66$ | 2 | B1 for angle $BED = 90^\circ$ soi |
| (b) | $[y =] 24$ | 1 | |
| (c) | $[z =] 48$ | 2FT | M1FT for angle $ABC = 90^\circ - their y$ |

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|----|-----|--|---|--|
| 20 | (a) | 102 to 106 | 2 | B1 for 5.1 to 5.3 seen |
| | (b) | Correct position of F with correct arcs for angle bisector | 5 | B2 for Correct ruled angle bisector of A with correct arcs or B1 for correct bisector with no/wrong arcs and B2 for Arc centre C , radius 8 cm or B1 for arc centre C with incorrect radius or correct conversion to 8 cm and B1 for marking position of F on <i>their</i> bisector and 8 cm from C or <i>their</i> arc centre C |