

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the October/November 2014 series**0581 MATHEMATICS****0581/13**

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.

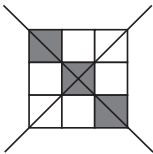
Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2014 series for most Cambridge IGCSE[®], Cambridge International A and AS Level components and some Cambridge O Level components.

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Abbreviations

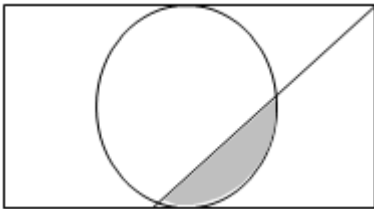
| | |
|------|----------------------------|
| cao | correct answer only |
| dep | dependent |
| FT | follow through after error |
| isw | ignore subsequent working |
| oe | or equivalent |
| SC | Special Case |
| nfww | not from wrong working |
| soi | seen or implied |

| Qu. | Answers | Mark | Part Marks |
|--------------|--|------------------------|---|
| 1 | $\frac{13}{100}$ oe | 1 | |
| 2 (a) | 304 620 | 1 | |
| (b) | 305 000 | 1FT | |
| 3 (a) | 2 | 1 | |
| (b) |  | 1 | |
| 4 | 9.61 | 2 | B1 for 9.609[1...] or for their answer seen rounded to 2 d.p. |
| 5 (a) | 5 | 1 | |
| (b) | 0.75 oe | 1 | |
| 6 (a) | 23.3 | 1 | |
| (b) | -15.5 | 1 | |
| 7 (a) | 14 | 1 | |
| (b) | 1296 | 1 | |
| 8 (a) | $\begin{pmatrix} 2 \\ 4 \end{pmatrix}$ | 1 | |
| (b) | $\begin{pmatrix} -9 \\ 18 \end{pmatrix}$ | 1 | |
| 9 | $\frac{12-10}{15}$ or $\frac{12}{15} - \frac{10}{15}$ oe $\frac{2}{15}$ oe | M1 A1 | Answer must be a fraction |

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| | | | |
|---------|---|------------|---|
| 10 | $\frac{y+1}{6}$ oe | 2 | B1 for $y+1=6x$ or $\frac{y}{6}=x-\frac{1}{6}$ If B0 SC1 for $\frac{y-1}{6}$ or $\frac{y}{6}+1$ |
| 11 | 0.34 0.7 ³ 0.6 ² $\sqrt{0.6}$ | 2 | M1 for decimal conversion: 0.7[7...] or 0.8 for $\sqrt{0.6}$ and 0.36 for 0.6 ² and 0.343 for 0.7 ³ or B1 for three in the correct order |
| 12 | 2.4×10^8 | 2 | B1 for 240 000 000 oe or B1 for $k \times 10^8$ or 2.4×10^k |
| 13 | 30 | 2 | M1 for $2x+3x+4x+90=360$ oe |
| 14 | 48 | 2 | M1 for $52 \div 65 [\times 60]$ oe implied by 0.8 |
| 15 (a) | 1440 | 2 | M1 for $18 \times 10 \times 8$ |
| (b) | 1700 | 1 | |
| 16 (a) | $6j-k$ | 2 | B1 for $6j \pm ak$ or $bj-k$ (a and $b \neq 0$) |
| (b) | $5(p+2)$ | 1 | |
| 17 (a) | 12 | 1 | |
| (b) | 60 | 1 | |
| (c) | Irrational number between 1 and 2 | 1 | |
| 18 | 9.5 or $\frac{19}{2}$ | 3 | M2 for $2x=(8 \times 3)-5$ or better oe or M1 for $2x+5=8 \times 3$ or better |
| 19 (a) | 16 [kg] | 1 | |
| (b) | Positive | 1 | |
| (c) (i) | Ruled line of best fit | 1 | |
| (ii) | Correct reading from ruled line | 1FT | |

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| | | | |
|--------|---|---|---|
| 20 (a) | Complete circle centre E radius 3 cm | 1 | |
| (b) | Correct ruled bisector with two pairs of correct arcs | 2 | B1 for correct bisector with no/wrong arcs |
| (c) |  | 1 | dep on attempt at bisector of C and enclosed region |
| 21 (a) | 58 | 2 | B1 for $ACB = 90^\circ$ soi as angle at C or M1 for $\tan \frac{8}{5}$ |
| (b) | 9.43 to 9.44 | 2 | M1 for $[AB^2 =] 8^2 + 5^2$ or $\sin 32 = \frac{5}{AB}$ or $\cos 32 = \frac{8}{AB}$ oe |
| 22 (a) | Trapezium | 1 | |
| (b) | 55° | 1 | |
| (c) | 21.4 or 19.55 to 23.37 nfww | 3 | B1 for $[AB =] 7.2$, $[DC =] 4.7$, and [height =] 3.6 seen and M1 for $0.5 \times \text{their } 3.6 \times \text{their } (4.7 + 7.2)$ |