

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2012 series**

|                         |                                     |
|-------------------------|-------------------------------------|
| <b>0581 MATHEMATICS</b> |                                     |
| <b>0581/13</b>          | 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 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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**Abbreviations**

|     |                            |
|-----|----------------------------|
| cao | correct answer only        |
| cso | correct solution only      |
| dep | dependent                  |
| ft  | follow through after error |
| isw | ignore subsequent working  |
| oe  | or equivalent              |
| SC  | Special Case               |
| www | without wrong working      |

| Qu. | Answers   | Mark | Part Marks   |
|-----|---|------|--|
| 1   | 74  | 1    |  |
| 2   | (a) 2   | 1    |  |
|     | (b) Correct line drawn  | 1    |  |
| 3   | 57  | 2    | M1 64 or 7   |
| 4   | (a) $7t$ final answer   | 1    |  |
|     | (b) $r^{13}$ final answer                                       | 1    |  |
| 5   | 96  | 2    | M1 for $\frac{600 \times 2 \times 8}{100}$ oe<br>If zero SC1 696 |
| 6   | $\frac{1}{100} + \frac{4}{25}$ or $0.1^2 + 0.4^2$ oe            | M1   |  |
|     | $\frac{1}{100} + \frac{16}{100} = 0.17$ or $0.01 + 0.16 = 0.17$ | M1   | Independent  |
| 7   | $5p + 11r$ final answer   | 2    | B1 $5p$ or $11r$ seen  |
| 8   | 180   | 2    | M1 for $\frac{300 \times 12}{20}$ oe                             |
| 9   | $3y - y^4$ final answer   | 2    | B1 for $3y$ or $-y^4$ as part of two term expression             |
| 10  | 88.2(0)   | 2    | M1 for $84 \times 1.05$ oe                                       |
| 11  | 249.5 [ $\leq j <$ ] 250.5 cao                                  | 2    | B1 for either, or both correct but reversed                      |
| 12  | (a) $\frac{5^2 + 20}{\sqrt{100}}$                               | 1    |  |
|     | (b) 4.5 cao   | 1    |  |

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|    |   |                            |  |
|----|---|----------------------------|--|
| 13 | $4y(x + 3z)$ final answer   | 2                          | <b>B1</b> $4(xy + 3yz)$ or $y(4x + 12z)$ or $2y(2x + 6z)$  |
| 14 | Accurate perpendicular bisector of $RT$ with arcs.  | 2                          | <b>B1</b> for 2 pairs of correct arcs<br><b>B1</b> for correct line  |
| 15 | 8.471 cao   | 2                          | <b>B1</b> for 8.47 or 8.4705 to 8.4706 or $\frac{144}{17}$<br>or $8\frac{8}{17}$   |
| 16 | 108   | 3                          | <b>M2</b> for $180 - (360 \div 5)$ or $\frac{180(5-2)}{5}$<br><b>M1</b> for $360 \div 5$ or $180 \times 3$                                   |
| 17 | $\frac{215}{40} - \frac{88}{40}$<br><br>$\frac{127}{40}$ or $3\frac{7}{40}$   | <b>M2</b><br><br><b>A1</b> | $3\left(\frac{15}{40} - \frac{8}{40}\right)$<br>OR<br><b>M1</b> for $\frac{15}{40}$ or $\frac{8}{40}$ or $\frac{215}{40}$ or $\frac{88}{40}$ |
| 18 | (a) 9<br>(b) Ruled line of best fit drawn<br>(c) positive   | 1<br>1<br>1                |  |
| 19 | (a) (5, 1) marked<br>(b) (-1, 0)<br>(c) 2   | 1<br>1<br>2                | <b>M1</b> correct rise over run  |
| 20 | (a) 0.71 oe<br>(b) (i) $\frac{3}{20}$ oe or 0.15 or 15%<br>(ii) $\frac{15}{20}$ oe or 0.75 or 75%<br>(iii) 0            | 1<br>1<br>1<br>1           |  |
| 21 | (a) (i) triangle with arcs<br>(ii) Midpoint marked 5.8 – 6.2 cm<br>(b) (i) Correct sketch<br>(ii) Rhombus or square cao | 2<br>1ft<br>1<br>1         | <b>M1</b> 1 side correct   |

|               |                                      |                 |  |
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|           |                            |  |                            |  |
|-----------|----------------------------|--|----------------------------|--|
| <b>22</b> | <b>(a)</b>                 | <b>(i)</b> 7.3 – 7.7 cm                  | <b>1</b>                   |  |
|           |                            | <b>(ii)</b> Tangent                      | <b>1</b>                   |  |
|           |                            | <b>(iii)</b> $D$ marked on circumference | <b>1</b>                   |  |
|           | <b>(b)</b> 11.3 to 11.3112 | <b>2</b>                                 | <b>M1</b> $3.6 \times \pi$ |  |