

## **MARK SCHEME for the October/November 2013 series**

### **0580 MATHEMATICS**

**0580/12**

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.





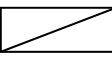
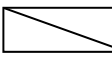
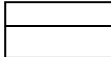
Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 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. | Answer  | Mark   | Part Marks   |
|-----|---|--------|--|
| 1   | $3 + 5 \times (4 - 2)$  | 1      |  |
| 2   | $\binom{2}{2}$  | 1      |  |
| 3   | 12 final answer   | 1      |  |
| 4   | (a) 3.5 symbols in hot chocolate row<br>(b) 7   | 1<br>1 |  |
| 5   | 19% $0.719^5$ $\sqrt{0.038}$ $\sin 11.4$ $1/5$  | 2      | <b>B1</b> for decimals [0.19], [0.2], 0.194..., 0.197..., 0.192... seen<br>Or for four in correct order  |
| 6   | (a) -447<br>(b) 2   | 1<br>1 |  |
| 7   | 15.7 or 15.70 to 15.71  | 2      | <b>M1</b> for $2 \times \pi \times 2.5$  |
| 8   | 160   | 2      | <b>M1</b> for $\frac{8}{18} \times 360$  |
| 9   | (a) <br>(b)  or  or <br>   | 1<br>1 | Many other answers   |
| 10  | 8.54[4....]   | 2      | <b>M1</b> for $7.2^2 + 4.6^2$ or better  |
| 11  | 10.1[0] Final answer  | 3      | <b>M1</b> for 1.3199 and 1.3401 seen<br>and <b>M1</b> for $500 \times 1.3199$ or $500 \times 1.3401$ or for $500 \times (\text{their highest} - \text{their lowest})$ oe                             |
| 12  | 10[.00]   | 3      | <b>M2</b> for 1.90 and 2.90 and 5.20 only<br>or <b>M1</b> for two of 1.90, 2.90, 5.20 in a list of three or two values from the table<br>or SC1 for 1.90, 2.90, 4.30 [from $\frac{3.40 + 5.20}{2}$ ] |

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|    |   |          |  |
|----|---|----------|--|
| 13 | (a) 5 cao   | 1        |  |
|    | (b) 196 cao   | 1        |  |
|    | (c) 97 cao  | 1        |  |
| 14 | (a) (0, 5)  | 1        |  |
|    | (b) -2  | 1        |  |
|    | (c) $y = -2x + k$   | 1        | $k \neq 5$   |
| 15 | (a) 26  | 1        |  |
|    | (b) $\frac{c-3}{10}$ or $\frac{3-c}{-10}$ oe final answer | 2        | <b>M1</b> for one correct step of a two step method.   |
| 16 | 74.1 or 74.137 to 74.140                                  | 3        | <b>M1</b> for $10 \times 6$<br>and <b>M1</b> for $0.5 \times \pi \times 3^2$   |
| 17 | $[x =] 3, [y =] 4$  | 3        | <b>M1</b> for correctly eliminating one variable<br><b>A1</b> for $[x =] 3$<br><b>A1</b> for $[y =] 4$<br>If zero scored, <b>SC1</b> for correct substitution and evaluation to find the other variable. |
| 18 | (a) $x^7$   | 1        |  |
|    | (b) $5y^6$  | 2        | <b>B1</b> for $5y^m$ or $ky^6$ in answer $m \neq 0, k \neq 0$  |
| 19 | (a) Ruled line from (0, 0) to (5, 22.5)                   | 2        | <b>B1</b> for (5, 22.5) <b>or</b> (0, 0) at the ends of the ruled line.  |
|    | (b) (i) 17.5 to 18.5                                      | 1FT      | FT <i>their</i> straight line  |
|    | (ii) 3.3 to 3.4   | 1FT      | FT <i>their</i> straight line  |
| 20 | (a) Net completed   | 2        | With one 2 by 5, one 3 by 5 and two 2 by 3 rectangles correctly positioned<br><b>B1</b> for 2 correct rectangles correctly positioned  |
|    | (b) 30  | 2        | <b>M1</b> for $3 \times 2 \times 5$  |
|    | cm <sup>3</sup>   | 1        | Independent mark   |
| 21 | (a) Angle bisector with correct arcs                      | 2        | <b>B1</b> for correct line, with incorrect or no arcs <b>or</b> correct arcs with incorrect or no line   |
|    | (b) Perpendicular bisector with two correct pairs of arcs | 2        | <b>B1</b> for correct line, with incorrect or no arcs <b>or</b> correct arcs with incorrect or no line   |
|    | (c) Arc centre C, radius 7cm<br>Correct region shaded     | 1<br>1FT | FT <i>their</i> arc centre C   |