**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**International General Certificate of Secondary Education**

# MARK SCHEME for the May/June 2013 series

## 0580 MATHEMATICS

**0580/13** 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.

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Cambridge is publishing the mark schemes for the May/June 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
soi seen or implied

| Question | Answers | Mark | Part Marks |
|---|---|---|---|
| **1** | 109 | **1** | |
| **2** | 3.177 | **2** | **B1** for 3.176[5] or 3.17 or 3.18 |
| **3** | 1500 or 3 pm | **2** | **B1** for 1h50 or 2h[0]5<br>or **SC1** for 1255 + *their* 1h 50 + 15mins correctly evaluated |
| **4** | $\frac{30}{300}$ oe www | **2** | **M1** for 30 seen or $\frac{k}{300}$ seen |
| **5** | [$x$ =] 7 | **2** | **M1** for correct first step<br>$3x = 16 + 5$ or $x - \frac{5}{3} = \frac{16}{3}$ |
| **6** | 79.5 [≤ $S$ <] 80.5 | **1, 1** | **SC1** answers reversed |
| **7** | £ or pound[s]<br>**working must be shown** | <br>**2** | **M1** for 425 ÷ 1.14 or 365 × 1.14 |
| **8** | $\frac{18}{5}$ and $\frac{9}{4}$ seen<br>$\frac{18}{5} \times \frac{9}{4}$ **and** $\frac{72}{45}$ or $\frac{24}{15}$ or $\frac{8}{5}$ oe seen | **M1**<br>**A1** | <br>Not essential to see $1\frac{3}{5}$ |
| **9** | $2y\,(3xy - 4)$ | **2** | **B1** for $2\,(3xy^2 - 4y)$ or $y\,(6xy - 8)$ |
| **10 (a)** | [±] **2.28** or 2.282 to 2.2822 | **1** | |
| **(b)** | **0.109** or 0.1094 [3 …] | **1** | |
| **11 (a)** | 129 | **1** | |
| **(b)** | Obtuse | **1** | |

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| | | | | |
|---|---|---|---|---|
| **12** | **(a)** | [**PQ** =] $\begin{pmatrix} 9 \\ -7 \end{pmatrix}$ | **1** | |
| | **(b)** | (–1 , –3) | **1** | |
| **13** | | ( $ ) 461.25 cao | **3** | **M1** for $4\,500 \times 1.05^2$ oe<br>**A1** for 4961.25<br>**A1ft** their amount – 4500<br>**OR**<br>**M2**for 4500×0.05+(4500×1.05)×1.05 or<br>**M1** for 4500 × 0.05 + 4500 |
| **14** | | 260 | **3** | **M2** for [2 × ] (4 × 10 + 18 × 5) oe<br>or **M1** for a correct area statement |
| **15** | **(a)** | [$x$ =] 7 | **1** | |
| | **(b)** | $3h^5$ | **2** | **B1** for $3h^n$ ($n \neq 0$) or $kh^5$ |
| **16** | **(a)** | $1.1 \times 10^5$ | **2** | **B1** for 110 000 oe e.g.$11 \times 10^4$ |
| | **(b)** | $5 \times 10^3$ | **2** | **B1** for 5000 oe e.g.$0.5 \times 10^4$ |
| **17** | **(a)** | 60 | **1** | |
| | **(b)** | Correct net | **3** | **B1** for 3 rectangles and a triangle to the right and left of rectangles.<br>**B1** for 3 accurate (6 by 4) rectangles joined.<br>**B1** for 2 equilateral triangles joined in correct positions |
| **18** | **(a)** | 6 points correctly plotted | **2** | **B1** for 4 or 5 correct |
| | **(b)** | Correct ruled line of best fit. | **1** | |
| | **(c)** | Negative | **1** | |
| **19** | **(a)** | $B$ (3 , 6.5) plotted and a ruled line $A$ to $B$ | **1** | |
| | **(b) (i)** | 1.5 oe | **2ft** | **M1** for $\frac{Rise}{Run}$ applied to their line |
| | **(ii)** | ($y$ = ) 1.5 $x$ + 2 | **2ft** | **B1** for their (b) (i) $x + a$ ( $a \neq 2$) or $b\,x$ + their 2 ($b \neq 0$ or 1.5) |
| | **(c)** | Ruled Line perpendicular to their line (±2º) and through the point (2 , 5) | **1ft** | |

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| | | | | |
|---|---|---|---|---|
| **20** | **(a)** | 226.98 to 227.01 | **2** | M1 for $\pi \times (17 \div 2)^2$ |
| | **(b) (i)** | Angle or triangle [in a] semi-circle | **1** | |
| | **(ii)** | 15.9 or 15.90 to 15.91<br>$or \sqrt{253}$ | **3** | M2 for $\sqrt{17^2 - 6^2}$ or<br>M1 for $17^2 = BC^2 + 6^2$ or better. |

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