CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2012 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 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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	$\frac{15}{56}$	**1**	
2	620	**1**	
3	**(a)** 8000 cao **(b)** 0.08 cao	**1** **1**	
4	**(a)** 91 700 000 **(b)** 9.17×10^7	**1** **1 ft**	Their **(a)** in standard form.
5	**(a)** $\frac{5}{19}$ oe **(b)** $\frac{11}{19}$ oe	**1** **1**	0.263 0.579 or 0.5789
6	[C=] $\frac{F-32}{1.8}$ oe final ans.	**2**	**M1** for first or second step correct e.g. $F - 32 = 1.8\ C$
7	$\begin{pmatrix} -2 \\ -10 \end{pmatrix}$	**2**	**B1** for each correct component or [3**b**] = $\begin{pmatrix} -6 \\ -9 \end{pmatrix}$ seen
8	**(a)** –7 **(b)** (+) 4	**1** **1**	
9	16	**3**	**M2** for $\frac{40.60-35}{35}\times 100$ or $\frac{40.6}{35}\times 100 - 100$ or **M1** for $40.60 - 35$ or $\frac{40.6}{35}$
10	**(a)** 12 and/or 18 **(b)** 16 **(c)** 13	**1** **1** **1**	

11	**(a)** 375 **(b)** 22.5	**1** **2 ft**	**M1** for their **(a)** ÷ 1000 × 60 or 1500 × 15 ÷ 1000 If zero **SC1** for answer figs 225
12	**(a)** 4 **(b)** 2 **(c)** 1 cao	**1** **1** **1**	
13	113 000 or 112 795 to 112 840	**3**	**B1** for 85 000 **M1** for $\pi \times 0.65^2 \times$ figs 85
14	**(a)** 5 30 pm **(b)** 67	**1** **2**	**M1** for 10h 45min and 3h 15min, oe seen or 53.75 **and** 3.25 or 53.45 **and** 3.15
15	**(a)** 50 **(b)** 65	**2** **1 ft**	**M1** for method of finding base angle of isosceles triangle (could be on diagram). 115 – their **(a)** or (180 – their **(a)**) ÷ 2
16	(\$) 693 (.00)	**3**	**M1** for $600(1 + \frac{7.5}{100})^2$ or equivalent in stages. **A1** for 693.4 or 693.37 or 693.38 or 693.375 **A1ft** for their answer to the nearest dollar If zero SC2 for 93 and **SC1** for 93.4 or 93.37 or 93.38
17	**(a)** $2x(3x - 4y)$ final ans. **(b)** $7a^7$ final ans.	**2** **2**	**M1** for $x(6x - 8y)$ or $2(3x^2 - 4xy)$ **M1** for $7a^k$ or ka^7 $k \neq 0$ for both cases
18	**(a)** Points plotted correctly **(b)** Positive **(c)** Line of best fit ruled	**2** **1** **1**	**B1** 6 or 7 points correct
19	**(a)** 4.79[1] or 4.79[06…] **(b)** 37.879 or 37.9[0]	**3** **2 ft**	**M2** for $\sqrt{(5.6^2 - 2.9^2)}$ or better, or **M1** for $2.9^2 + BD^2 = 5.6^2$ or better. **M1** for sin [BCD =] their (a) / 7.8 or better
20	**(a)** Angle (in a) semi-circle **(b)** **(i)** 56 **(ii)** 112 **(c)** 540 cao	**1** **1** **1** **2**	**M1** for all attempts to sum all the angles or any correct method for the sum of angles of a pentagon.