CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

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.

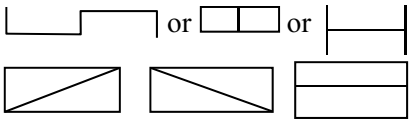
Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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.

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 **(b)** 7	1 1	
5	19% 0.719^5 $\sqrt{0.038}$ sin 11.4 1/5	2	**B1** for decimals [0.19], [0.2], 0.194…, 0.197…, 0.192… seen Or for four in correct order
6	**(a)** −447 **(b)** 2	1 1	
7	15.7 or 15.70 to 15.71	2	**M1** for $2 \times \pi \times 2.5$
8	160	2	**M1** for $\frac{8}{18} \times 360$
9	**(a)**  **(b)** 	1 1	Many other answers
10	8.54[4....]	2	**M1** for $7.2^2 + 4.6^2$ or better
11	10.1[0] Final answer	3	**M1** for 1.3199 and 1.3401 seen and **M1** for 500 × 1.3199 or 500 × 1.3401 or for 500 × (their highest – their lowest) oe
12	10[.00]	3	**M2** for 1.90 and 2.90 and 5.20 only or **M1** for two of 1.90, 2.90, 5.20 in a list of three or two values from the table or SC1 for 1.90, 2.90, 4.30 [from $\frac{3.40+5.20}{2}$]

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