## **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.



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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	$\begin{pmatrix} 2 \\ 2 \end{pmatrix}$	1	
3	12 final answer	1	
4	(a) 3.5 symbols in hot chocolate row	1	
	<b>(b)</b> 7	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 Or for four in correct order
6	(a) -447	1	
	<b>(b)</b> 2	1	
7	15.7 or 15.70 to 15.71	2	M1 for $2 \times \pi \times 2.5$
8	160	2	<b>M1</b> for $\frac{8}{18} \times 360$
9	(a)	1	
	(b) or or or		
		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	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 $\frac{3.40+5.20}{2}$ ]

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			1
13	(a) 5 cao	1	
	<b>(b)</b> 196 cao	1	
	(c) 97 cao	1	
14	<b>(a)</b> (0, 5)	1	
	<b>(b)</b> -2	1	
	(c) $y = -2x + k$	1	$k \neq 5$
15	(a) 26	1	
	<b>(b)</b> $\frac{c-3}{10}$ or $\frac{3-c}{-10}$ oe final answer	2	M1 for one correct step of a two step method.
16	74.1 or 74.137 to 74.140	3	M1 for $10 \times 6$ 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	$(a)  x^7$	1	
	<b>(b)</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>(b) (i)</b> 17.5 to 18.5	1FT	FT their straight line
	(ii) 3.3 to 3.4	1FT	FT their straight line
20	(a) Net completed	2	With one 2 by 5, one 3 by 5 and two 2 by 3 rectangles correctly positioned  B1 for 2 correct rectangles correctly positioned
	<b>(b)</b> 30 cm <sup>3</sup>	2	M1 for 3 × 2 × 5 Independent mark
21	(a) Angle bisector with correct arcs	2	B1 for correct line, with incorrect or no arcs or correct arcs with incorrect or no line
	(b) Perpendicular bisector with two correct pairs of arcs	2	B1 for correct line, with incorrect or no arcs or correct arcs with incorrect or no line
	(c) Arc centre C, radius 7cm Correct region shaded	1 1FT	FT their arc centre C