CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 series

0444 MATHEMATICS (US)

0444/13   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.

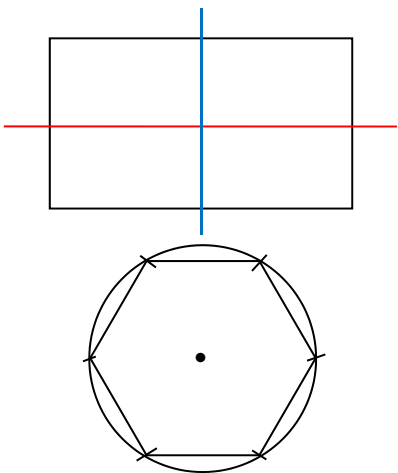Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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.

Qu.		Answers	Mark	Part Marks
1		84	1	
2		$a(2a - 5)$ final answer	1	
3		29	1	
4		$\begin{pmatrix} 6 \\ -7 \end{pmatrix}$	1	
5		39	2	**M1** for $52 \times (\frac{45}{60})$
6	(a)	2600	1	
	(b)	[0].058	1	
7	(a)	$\frac{6}{11}$	1	
	(b)	Arrow to right of 0.5	1	Reasonable accuracy
8		Any two of (20, 8), (−4, 0) and (12, 24)	2	**B1** for one correct
9	(a)	3	1	
	(b)	3	1	
10	(a)	Negative	1	
	(b)	Positive	1	
11		[$AB =$] 5.3 to 5.7 cm	1	**SC1** for correct length line and bearing but starting at base of North line
		[Bearing] 130° to 134°	1	
12		[$x =$] 1.75 or $1\frac{3}{4}$ or $\frac{7}{4}$	2	**M1** for first correct step $4x = 7$, r $x + \dfrac{3}{4} = \dfrac{10}{4}$
13		$\dfrac{22}{7} - \dfrac{7}{5}$	B1	
		$\dfrac{5 \times their\ 22}{35} - \dfrac{7 \times their\ 7}{35}$ oe or $\dfrac{5 \times their\ 22 - 7 \times their\ 7}{35}$ oe	M1	
		$\dfrac{61}{35}$ or $1\dfrac{26}{35}$ cao	A1	

14		$[x =]$ 3, $[y =]$ −2	3	**M1** for correctly eliminating one **A1** for $[x =]$3 **A1** for $[y =]$ −2 If zero scored, **SC1** for correct substitution and evaluation to find the other variable
15	**(a)**	3×10^4	2	**B1** for 3×10^k or $k \times 10^4$
	(b)	3.12×10^5	2	**B1** for figs 312
16	**(a)**	Accurate bisector of **either** side of rectangle with arcs. e.g. 	2	**B1** for correct ruled line (must reach or cross two sides) **B1** for 2 pairs of correct intersecting arcs
	(b)		2	**B1** for correct set of arcs or for a circle constructed accurately with centre on the circumference of the given circle as shown or for sufficiently accurate hexagon with no arcs
17	**(i)**	35 or 70	1	
	(ii)	36 or 64	1	
	(iii)	27 or 64	1	
	(iv)	31 or 41 or 61 or 71	1	
18	**(a)**	$11x − 7y$ final answer	2	**B1** for $11x \pm my$ or $nx − 7y$
	(b)	$3a − 2b$ final answer	2	**B1** for $8a −12b$ or $−5a + 10b$ or $3a \pm pb$ or $qa −2b$

19	(a)	(i)	1000 [m]	1	
		(ii)	80 [m/min]	2	**M1** for $1600 \div 20$
		(iii)	20 [min]	1	
	(b)	(i)	Ruled line from (11 10, 1600) to (11 35, 0)	2	**M1** for $1600 \div 64$ soi
		(ii)	11 35	1FT	their line at the axis if on the grid and not before 11 10.
20	(a)	(i)	$-\dfrac{2}{8}$ oe	1	
		(ii)	4	1	
	(b)		$\dfrac{1}{x}$ final answer	1	
	(c)		$\dfrac{2}{6}$ oe	2	**M1** for $\dfrac{2}{x} = 6$ or better
	(d)		sf 4 x axis invariant oe	1 1	