CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2013 series

0444 MATHEMATICS (US)

0444/11 Paper 1 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 May/June 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
soi seen or implied

Qu	Answers	Mark	Part Answers
1	$\frac{9}{20}$ cao	**1**	
2	11 or −11	**1**	
3	–9 or –23	**2**	**B1** for 7 **or** 16 seen
4	72	**2**	**M1** for 84 ÷ 7
5	105	**2**	**M1** for 180 – 55 – 50 **or B1** for 55 or 75 seen in the correct angle inside the triangle
6	8	**2**	**M1** for $\frac{3k}{2k} \times \frac{16n}{3n}$
7 (a)	$\begin{pmatrix} 6 \\ -8 \end{pmatrix}$	**1** **1**	If zero, **SC1** for vector QP
(b)	(−1, 1)	**1**	
8	[b =] 5(a + 9) oe final answer	**2**	**M1** for one correct step
9 (a)	32	**1**	
(b)	7n − 3 oe	**2**	**B1** for 7n
10 (a)	−6	**1**	
(b)	13	**2**	**B1** for $\frac{12}{16}$ **or** $\frac{14}{16}$ **or** $\frac{13}{16}$ seen
11 (a)	[0].55 oe	**1**	
(b)	18	**2**	**M1** for 40 × [0].45 oe
12 (a)	cuboid	**1**	condone [rectangular] prism
(b)	pentagon	**1**	
(c)	obtuse	**1**	

13 **(a)**	7	**1**	
(b)	37.5	**1**	
	cm3	**1**	
14	32.64 cao final answer	**3**	**M1** for $400 + 400 \times \frac{4}{100}$ **and M1** for interest for 2nd year $= \frac{4}{100} \times$ their 416 **OR** **M2** for $400 \times (1 + \frac{4}{100})^2 - 400$ **or M1** for $400 \times (1 + \frac{4}{100})^2$ **or** if zero, **SC2** for answer 432.64
15 **(a)**	55[.00]	**1**	
(b)	200	**2**	**M1** for $220 \div 1.1$ or equivalent
16 **(a)** **(i)**	$[p =] -1$ **and** $[q =] 5$	**1**	
(ii)	$1 \leq f(x) \leq 19$ oe	**1**	Accept y for $f(x)$ Condone < for ≤
(b)	[0], 1, 2, 3, 4 oe	**1**	
17 **(a)**	C, D	**1, 1**	
(b)	–2	**1**	
18 **(a)**	correct ruled line two pairs of correct arcs	**1** **1**	
(b)	correct ruled line two pairs of correct arcs	**1** **1**	
19 **(a)**	$\frac{1}{25}$	**1**	
(b)	[0].25	**1**	
(c) **(i)**	a^9 final answer	**1**	
(ii)	$4b^{12}$ final answer	**2**	**B1** for $4b^k$ **or B1** for kb^{12} where k is an integer ($k \neq 0$)

20	**(a)**	$5x + 15$ final answer	**1**	
	(b)	$3x(4y - x)$ final answer	**2**	**B1** for $3(4xy - x^2)$ **or** $x(12y - 3x)$
	(c)	15	**2**	**M1** for correct first step ie $5x = 51 + 24$ **or** $x - \frac{24}{5} = \frac{51}{5}$ **or better**