

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.

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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
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 $84 \div 7$
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	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	B1 for $7n$
(b)	$7n - 3$ oe	2	
10 (a)	-6	1	B1 for $\frac{12}{16}$ or $\frac{14}{16}$ or $\frac{13}{16}$ seen
(b)	13	2	
11 (a)	[0].55 oe	1	M1 for $40 \times [0].45$ oe
(b)	18	2	
12 (a)	cuboid	1	condone [rectangular] prism
(b)	pentagon	1	
(c)	obtuse	1	

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13 (a)	7	1	
(b)	37.5	1	
	cm ³	1	
14	32.64 cao final answer	3	<p>M1 for $400 + 400 \times \frac{4}{100}$ and M1 for interest for 2nd year $= \frac{4}{100} \times \text{their } 416$ OR</p> <p>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</p>
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 \leq
(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 ($k \neq 0$)

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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