

MARK SCHEME for the October/November 2012 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.

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Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0444	13

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 marks
1 (a)	74	1	
2 (a)	2	1	
(b)	Correct line drawn	1	
3	57	2	M1 64 or 7
4 (a)	$7t$ final answer	1	
(b)	r^{13} final answer	1	
5	96	2	M1 for $\frac{600 \times 2 \times 8}{100}$ o.e. If zero SC1 696
6	$\frac{1}{100} + \frac{4}{25}$ or $0.1^2 + 0.4^2$ oe $\frac{1}{100} + \frac{16}{100} = 0.17$ or $0.01 + 0.16 = 0.17$	M1 M1	Independent
7	$5p + 11r$ final answer	2	B1 $5p$ or $11r$ seen
8	180	2	M1 for $\frac{300 \times 12}{20}$ oe
9	$3y - y^4$ final answer	2	B1 for $3y$ or $-y^4$ as part of two term expression
10	88.2(0)	2	M1 for 84×1.05 o.e.
11 (a)	Data which can take on any value oe	1	E.g. Data which has no gaps Data which needs to be measured
(b)	9.5	2	M1 correctly ordered list, at least 7
12 (a)	$\frac{5^2 + 20}{\sqrt{100}}$	1	
(b)	4.5 cao	1	
13	$4y(x + 3z)$ final answer	2	B1 $4(xy + 3yz)$ or $y(4x + 12z)$ or $2y(2x + 6z)$

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0444	13

14	$\frac{215}{40} - \frac{88}{40}$ $\frac{127}{40}$ or $3\frac{7}{40}$	M2 A1	$3\left(\frac{15}{40} - \frac{8}{40}\right)$ OR M1 for $\frac{15}{40}$ or $\frac{8}{40}$ or $\frac{215}{40}$ or $\frac{88}{40}$
15	108	3	M2 for $180 - (360 \div 5)$ or $\frac{180(5-2)}{5}$ M1 for $360 \div 5$ or 180×3
16 (a)	9	1	
(b)	Ruled line of best fit drawn	1	
(c)	positive	1	
17	4	2	B1 for 1.8
18 (a)	The three angles in triangle <i>ABC</i> are the same as the corresponding angles in triangle <i>DEF</i>	1	Condone all three angles are the same
(b) (i)	3 or $\frac{1}{3}$ oe	1	
(ii)	4.5 cao	1	
19 (a)	0.71 oe	1	
(b) (i)	$\frac{3}{20}$ oe or 0.15 or 15%	1	
(ii)	$\frac{15}{20}$ oe or 0.75 or 75%	1	
(iii)	0	1	
20 (a) (i)	7.3 – 7.7 cm	1	
(ii)	Tangent	1	
(iii)	<i>D</i> marked on circumference	1	
21 (a) (i)	triangle sides ± 2 mm with arcs	2	M1 1 side correct ± 2 mm
(ii)	Midpoint marked 5.8 – 6.2 cm	1FT	
(b) (i)	Correct sketch	1	
(ii)	Rhombus or square cao	1	

Page 4	Mark Scheme	Syllabus	Paper
	IGCSE – October/November 2012	0444	13

22 (a)	(5, 1) marked	1	M1 correct rise over run
(b)	(-1, 0)	1	
(c)	2	2	