

**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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**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 <sup>13</sup> 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 <sup>4</sup> final answer	2	B1 for 3y or –y <sup>4</sup> 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)

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14	$\frac{215}{40} - \frac{88}{40}$ $\frac{127}{40} \text{ or } 3\frac{7}{40}$	<b>M2</b> $3\left(\frac{15}{40} - \frac{8}{40}\right)$ OR <b>M1</b> for $\frac{15}{40}$ or $\frac{8}{40}$ or $\frac{215}{40}$ or $\frac{88}{40}$  <b>A1</b>
15	108	<b>3</b> <b>M2</b> for $180 - (360 \div 5)$ or $\frac{180(5-2)}{5}$ <b>M1</b> for $360 \div 5$ or $180 \times 3$
16 (a)	9	<b>1</b>
(b)	Ruled line of best fit drawn	<b>1</b>
(c)	positive	<b>1</b>
17	4	<b>2</b> <b>B1</b> 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>	<b>1</b>
(b) (i)	3 or $\frac{1}{3}$ oe	<b>1</b>
(ii)	4.5 cao	<b>1</b>
19 (a)	0.71 oe	<b>1</b>
(b) (i)	$\frac{3}{20}$ oe or 0.15 or 15%	<b>1</b>
(ii)	$\frac{15}{20}$ oe or 0.75 or 75%	<b>1</b>
(iii)	0	<b>1</b>
20 (a) (i)	7.3 – 7.7 cm	<b>1</b>
(ii)	Tangent	<b>1</b>
(iii)	<i>D</i> marked on circumference	<b>1</b>
21 (a) (i)	triangle sides $\pm 2$ mm with arcs	<b>2</b>
(ii)	Midpoint marked 5.8 – 6.2 cm	<b>1FT</b>
(b) (i)	Correct sketch	<b>1</b>
(ii)	Rhombus or square cao	<b>1</b>

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