

MARK SCHEME for the October/November 2014 series

0444 MATHEMATICS (US)

0444/11

Paper 1 (Core), maximum raw mark 56

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Abbreviations

- cao correct answer only
- dep dependent
- FT follow through after error
- isw ignore subsequent working
- oe or equivalent
- SC Special Case
- nfww not from wrong working
- soi seen or implied

Qu.	Answers	Mark	Part Marks
1	$\begin{pmatrix} 7 \\ -4 \end{pmatrix}$	1	
2 (a)	15.1 cao	1	
(b)	20 cao	1	
3 (a)	E B A cao	1	
(b)	Z cao	1	
4	113	2	M1 for $360 - (98 + 90 + 105)$ or better
5	137	2	M1 for attempt at ordering to at least 7 th term or 132 and 142 indicated
6	0.096 $\frac{2}{3}$ 75% 0.78 $\frac{3}{2}$	2	B1 for 0.66..., 0.75 and 1.5 seen or 9.6%, 66...%, 78% and 150% seen or SC1 for four in correct order
7	$\frac{5}{12}$ cao	2	M1 for $\frac{3}{12}$ and $\frac{2}{12}$ or equivalent
8	$4w(2wx - 3y)$ Final answer	2	B1 for $4(2w^2x - 3wy)$ or $w(8wx - 12y)$ or $2w(4wx - 6y)$
9	480	3	M2 for 12×40 or 24×20 oe or M1 for $\frac{1}{2} \times 20 \times 12$ or $\frac{1}{2} \times 24 \times 20$ or 40×24 oe
10 (a)	-3	1	
(b)	4	1FT	FT their numerical mode
11	$4x - 7$ Final answer	2	B1 for answer $4x + k$ or answer $jx - 7$ where $j \neq 0$ or correct answer seen then spoil

12 (a)	91 or 13	1	
(b)	2, 7 and 13	2	B1 for correct products of primes method or correct factor tree or ladder or 2 correct and 0 wrong or 3 correct and 1 extra
13 (a)	280	1	
(b)	5×10^6	2	B1 for 5 000 000 oe or B1 for answer $k \times 10^6$ or 5×10^k
14 (a)	4 [days]	2	M1 for $(39 - 15) \div 6$ or $15 + 6 + 6 + 6 + 6$
(b)	[C=] $15 + 6d$ Final answer	1	
15	9 [sides]	3	M2 for $360 \div (180 - 140)$ or M1 for $180 - 140$
16 (a)	66	1	
(b)	42	2FT	FT <i>their (a)</i> – 24, only if <i>their (a)</i> > 24 or B1 for either of these, may be on diagram, angle $OAC = 24$ or angle $BAC = \textit{their (a)}$
17	82	2	M1 for $(800 + 800 \times 0.05) \times 0.05$
18	1.20	3	M2 for 31.20 or M1 for figs 312 or 24×1.3 seen
19 (a)	80	2	M1 for $5 \times (-4)^2$ or 5×4^2 or better
(b)	$zy - w$	2	B1 for $zy = x + w$ or for $y - \frac{w}{z} = \frac{x}{z}$
20	[x =] 3, [y =] 0.5	3	M1 for correct method to eliminate one variable A1 for [x =] 3 A1 for [y =] 0.5 If zero scored, SC1 for correct substitution and evaluation to find the other variable
21 (a)	Correct diagram	2	B1 for correct set of at least 4 arcs oe or SC1 for sufficiently accurate triangle with all 3 vertices on the circumference with angles $60^\circ \pm 2^\circ$
(b)	60	1	

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22	(a)	$1 \leq f \leq 36$	2	1 mark for each value
	(b)	discontinuity at $x = 0$	1	
		correct shape over domain 0 to 5	1	