MATHEMATICS (US)   **0444/13**

Paper 1 (Core)   **October/November 2016**

MARK SCHEME

Maximum Mark: 56

Published

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
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

Question		Answer	Mark	Part marks
1		5 034	**1**	
2		–3	**1**	
3		36	**1**	
4		n^7 final answer	**1**	
5	**(a)**	2.47×10^6	**1**	
	(b)	7.9×10^{-3}	**1**	
6		$0.4^2 \quad 0.22 \quad \left(\dfrac{1}{2}\right)^2 \quad \sqrt{0.09}$	**2**	**M1** for decimal conversion of 0.25, 0.3 and 0.16
7	**(a)**	Station wagon	**1**	
	(b)	35	**1FT**	
8		$\dfrac{23}{30}$ cao	**2**	**M1** for $\dfrac{18k}{30k}$ and $\dfrac{5k}{30k}$
9	**(a)**	18.3	**1**	
	(b)	128	**1**	
10		48	**2**	**M1** for $\dfrac{x}{16} = \dfrac{30}{10}$ or $\dfrac{x}{30} = \dfrac{16}{10}$ oe or 3 or $\dfrac{1}{3}$
11	**(a)**	172	**1**	
	(b)	166	**2**	**B1** for an ordered list of at least 5 numbers or **B1** 164 and 168 identified
12	**(a)**	0.6	**1**	
	(b)	$\dfrac{12}{25}$	**2**	**B1** for $\dfrac{48}{100}$ or equivalent fraction

Question	Answers	Mark	Part Marks
13 (a)	960	**1**	
(b)	200	**2**	**M1** for 6400 ÷ 32
14 (a) (i)	$\dfrac{5}{12}$	**1**	
(ii)	0	**1**	
(b)	[0].65	**1**	
15	36	**3**	**M2** for 5 × 3 + 7.5 + 9.5 + 4 oe or **M1** for two of 5, 7.5, 9.5 and 4
16 (a)	$\begin{pmatrix} 2 \\ 1 \end{pmatrix}$	**1**	
(b)	8, 7	**1**	
17 (a)	60	**2**	**M1** for 2 × 3 × 10
(b)	not reasonable oe his answer is too big oe	**1**	
18 (a)	30	**1**	
(b)	47.5	**3**	**M2** for $(5 \times 5) + \left(\dfrac{4.5 \times 5}{2} \right)$[×2] oe soi or **M1** for $\dfrac{4.5 \times 5}{2}$[×2] oe seen or 4.5 × 5 + 25
19 (a)	142	**1**	
(b)	9	**2**	**M1** for 360 ÷ 40
20 (a)	Three correct, ruled lines	**2**	**B1** for two correct lines
(b) (i)	Drawing a rectangle or rhombus	**1**	
(ii)	**FT** their quadrilateral in **(b)(i)**	**1FT**	
21 (a) (i)	21	**1**	
	subtract 7	**1**	
(ii)	162	**1**	
	multiply by 3	**1**	
(b)	$5n - 2$	**2**	**M1** for $kn - 2$ or $5n + k$

Question	Answers	Mark	Part Marks
22	Correct method to eliminate one variable	**M1**	**M1** for correctly equating one set of coefficients
	$x = 5$ and	**A1**	
	$y = -2$	**A1**	If zero scored, **SC1** for 2 values satisfying one of the original equations or **SC1** if no working shown, but 2 correct answers given