
MATHEMATICS (US)

0444/11

Paper 1 (Core)

May/June 2017

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	Marks	Part marks
1	70 020 cao	1	
2	$\frac{1}{25}$	1	
3	5	1	
4	x^{10}	1	
5	Congruent	1	
6	31 or 37	1	
7(a)	23.46 cao	1	
7(b)	20 cao	1	
8	$4n(3n - m)$ final answer	2	B1 for $4(3n^2 - mn)$ or $n(12n - 4m)$ or $2n(6n - 2m)$ or $2(6n^2 - 2mn)$
9	6	2	B1 for answer 2 or 3 or M1 for prime factors of 126 and 150 seen
10(a)	Chicago	1	
10(b)	-3	1	
11	$21y + xy$ or $y(21 + x)$ final answer	2	B1 for $14x + 21y$ or $-14x + xy$ or $ky + xy$
12	13 -7	1, 1	
13(a)	$\begin{pmatrix} -2 \\ -5 \end{pmatrix}$	1	
13(b)	4, 2	1	
14	18	2	M1 for $4500 \div 250$ soi
15(a)	$\frac{21}{50}$ oe	1	
15(b)	210	1FT	FT <i>their (a)</i> $\times 750$ provided $0 < \textit{their (a)} < 1$

Question	Answer	Marks	Part marks
16	$\frac{1}{9}$	2	B1 for $\frac{4}{36}$ or $\frac{2}{18}$
17	$\frac{2s-5t}{t}$ oe	2	M1 for $\frac{2s}{t} = 5 + v$ or $2s = 5t + tv$ oe
18(a)	-5	1	
18(b)(i)	$3 \times (5 + 2) + 2 = 23$	1	
18(b)(ii)	$12 \div (4 + 2) = 2$	1	
19	$2\frac{8}{21}$ cao	3	M2 for $\frac{50}{21}$ or $1\frac{8}{21}$ or $\frac{29}{21}$ or $1\frac{29}{21}$ M1 for $\frac{14(or\ 35)}{21} + \frac{15}{21}$ oe
20	Correctly eliminating one variable	M1	
	[x =] 2	A1	
	[y =] -7	A1	If zero scored, SC1 for 2 values satisfying one of the original equations SC1 for both correct but no working
21(a)	420	1	
21(b)(i)	60	2	M1 for $90 \div 3 \times 2$ soi
21(b)(ii)	1.08	3FT	B2 for an answer of 10800 or M2 for $0.9^2 + their\ 0.6 \times 0.9 \div 2$ or for $90^2 + their\ 60 \times 90 \div 2$ or B1 for 8100 or 2700 or 0.81 or 0.27 seen or M1 for 90×90 oe or $their\ 60 \times 90 \div 2$ oe or for a correct change of unit soi
22(a)	Points plotted at (4.5, 33) and (6.5, 35)	1	
22(b)	Positive	1	
22(c)	Correct ruled line	1	
22(d)	33.5 to 37.4	1FT	FT from <i>their</i> line provided positive gradient
23(a)(i)	7	1	
23(a)(ii)	$49p^2 - 2$ final answer	1	

Question	Answer	Marks	Part marks
23(b)(i)	-3	1	
23(b)(ii)	3	1	
23(b)(iii)	-6.....-1	1	
24(a)	Correct ruled bisector of AB with 2 pairs of arcs	2	B1 for correct bisector with no or incorrect arcs or 2 pairs of correct arcs
24(b)	Correct ruled bisector of angle ADC with 2 pairs of arcs	2	B1 for correct bisector with no or incorrect arcs or 2 pairs of correct arcs