Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

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 ÷ 250 soi
15(a)	$\frac{21}{50}$ oe	**1**	
15(b)	210	**1FT**	**FT** *their* **(a)** × 750 provided 0 < *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 × (5 + 2) + 2 = 23	**1**	
18(b)(ii)	12 ÷ (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 ÷ 3 × 2 soi
21(b)(ii)	1.08	**3FT**	**B2** for an answer of 10800 or **M2** for 0.9^2 + *their* 0.6 × 0.9 ÷ 2 or for 90^2 + *their* 60 × 90 ÷ 2 or **B1** for 8100 or 2700 or 0.81 or 0.27 seen or **M1** for 90 × 90 oe or *their* 60 × 90 ÷ 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 *their* 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