Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/33**

Paper 3 (Core) **May/June 2016**

MARK SCHEME

Maximum Mark: 96

Published

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Abbreviations

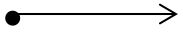
awrt answers which round to
cao correct answer only
dep dependent
FT follow through after error
isw ignore subsequent working
oe or equivalent
SC Special Case
nfww not from wrong working
soi seen or implied

Question	Answer	Mark	Part Marks
1 (a)	(7, 2)	**1**	
(b)	Right-angled or isosceles	**1**	
(c)	45	**1**	
(d)	Straight line from (3, 2) to (5, 4) at least	**1**	
2 (a)	171 000	**4**	**M3** for 300 × (210 + 150 + 210) oe or **M2** for 3 × (2.1 + 1.5 + 2.1) oe soi or **M1** for 3 × 2.1 or 3 × 1.5 oe soi
(b) (i)	190	**3**	**M2** for $\frac{300}{30} \times \frac{570}{30}$ oe or **B1** for ÷ 30 soi
(ii)	38 pattern tiles 152 plain tiles 16 boxes plain, 4 boxes pattern	**2** **2** **1FT**	**M1** for *their*190 ÷ 5 (× 1) oe **M1** for *their*190 ÷ 5 × 4 oe
(c)	9.45	**2**	**M1**for 3 × 2.1 × 1.5
3 (a) (i)	Green	**1**	
(ii)	Yellow	**1**	
(iii)	$\frac{2}{12}$ oe isw	**1**	
(iv)	0	**1**	
(b)	G 1 or 1 R 2 1 O 2 3 Y 5 5	**3**	**B1** for G + R + O + Y = 10 **B1** for 5 yellow
4 (a) (i)	290	**2**	**M1** for 65×4
(ii)	7	**2**	**M1** for (485 – 30) ÷ 65 soi
(b)	24	**2**	**M1** for distance ÷ time soi

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Question	Answer	Mark	Part Marks
5 (a) (i)	13 | 1 1 4 14 | 1 2 7 7 15 | 1 2 2 3 5 9 16 | [0] 4	**2**	**B1** for correct table with 1 or 2 errors or 'correct' table but unordered leaves
	e.g. 16 | 0 represents 16.0 [years]	**1**	
(ii)	3.3	**1**	
(iii)	15.1	**1**	
(b)	14.6	**2**	**M1** for $7 \div 12$ soi
6 (a) (i)	1 or 4 or 6	**1**	
(ii)	9	**1**	
(iii)	15	**1**	
(iv)	8	**1**	
(v)	7	**1**	
(b)	7, 9 in A 6, 8 in $A \cap B$ 2, 10, 14 in B	**1** **1** **1**	If 0 scored **SC1** for 2, 4, 6, 8, 10, 12, 14 only anywhere in B
7 (a)	Correct reflection	**1**	
(b)	Correct rotation	**2**	**B1** for correct rotation 90 anti-clockwise or for correct orientation, wrong position
(c)	Correct translation	**2**	**B1** for either 3 horizontal to right or 2 vertical up or for correct $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ translation
(d)	Enlargement [Scale factor] 2	**1** **1**	If more than one transformation, question scores zero.

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Question	Answer	Mark	Part Marks
8 (a) (i)	8	**1**	
(ii)	–4	**1**	
(iii)	$1\frac{1}{2}$ oe	**3**	**B1** for $12x - 10 = 8$ or $6x - 5 = 4$ **B1** for $12x = 8 +$ *their*10 Or for $6x =$ *their* $4 + 5$
(b)	$x = -2$ $y = 5$	**2**	**B1** for $x = -2$ **B1** for $y = 5$ If 0 scored **SC1** for two values satisfying one of the original equations
9 (a)	Maths and E:80% M:85% S: 70%	**3**	**B2** for 2 values correct or **M1** for mark ÷ total implied by 1 value correct
(b)	81	**3**	**M2** for 60×1.35 oe or **M1** for 60×0.35 oe
10 (a)	Substitute $x = 4$ and $y = 5$ Show this balances	**1** **1**	OR Substitute $x = 4$ into equation Show get $y = 5$
(b)	2	**1**	
(c)	$y = 2x + 1$ oe final answer	**2**	**B1** for $y = 2x + n$ oe $n \neq -3$ or for $y = px + 1$ oe $p \neq 0$ or for $2x + 1$
(d)	$[x =] \frac{y+3}{2}$ oe final answer	**2**	**M1** for correct first step **M1FT** for correct second step
11 (a)	Correct diagram	**2**	**B1** for 0.7 oe correctly placed once
(b)	0.09 oe	**2**	**M1** for $0.3 \times$ *their* 0.3
12 (a)	$9x$ final answer	**2**	**B1** for $\frac{9x^2}{[1]x}$ or $\frac{18x}{2}$ seen
(b)	$3x([1]x + 2)$ final answer	**2**	**B1** for $3([1]x^2 + 2x)$ or $x(3x + 6)$
(c)	 3	**1**	
(d)	5, 6, 7	**1**	
(e)	$x^2 + [1]x - 6$ final answer	**2**	**B1** for any three of x^2, $-2x$, $(+)3x$, -6 seen
13 (a)	13.8 or 13.82…	**2**	**M1** for $7.2^2 + 11.8^2$ soi
(b)	37.8 or 37.82…	**2**	**M1** for tan $[y =]$ 11.8 ÷ 15.2

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Question	Answer	Mark	Part Marks
14 (a)	Correct shape Correct position	**1** **1**	
(b)	Max (–2, 20) Min (1, –7)	**1** **1**	
(c)	(–3.31, 0) (0, 0) (1.81, 0)	**1** **1** **1**	If 0 scored **SC1** for – 3.3, 0, 1.8 seen as x

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