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CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/33

Paper 3 (Core)

May/June 2016

MARK SCHEME

Maximum Mark: 96

Published

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Abbreviations

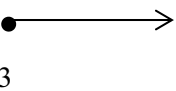
awrt	answers which round to
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfww	not from wrong working
soi	seen or implied

Question	Answer	Mark	Part Marks
1 (a)	(7, 2)	1	
(b)	Right-angled <u>or</u> isosceles	1	
(c)	45	1	
(d)	Straight line from (3, 2) to (5, 4) at least	1	
2 (a)	171 000	4	M3 for $300 \times (210 + 150 + 210)$ oe or M2 for $3 \times (2.1 + 1.5 + 2.1)$ 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 $\div 30$ soi
(ii)	38 pattern tiles 152 plain tiles 16 boxes plain, 4 boxes pattern	2 2 1FT	M1 for <i>their</i> $190 \div 5 (\times 1)$ oe M1 for <i>their</i> $190 \div 5 \times 4$ oe
(c)	9.45	2	M1 for $3 \times 2.1 \times 1.5$
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 $(485 - 30) \div 65$ soi
(b)	24	2	M1 for distance $\div$ 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		
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		1
		6, 8 in $A \cap B$		1
		2, 10, 14 in B		1
7 (a)	Correct reflection	1	B1 for correct rotation 90 anti-clockwise or for correct orientation, wrong position	
	(b) Correct rotation	2		
	(c) Correct translation	2		
	(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 $12x = 8 + \text{their } 10$ Or for $6x = \text{their } 4 + 5$
(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 $0.3 \times \text{their } 0.3$
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)		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 $\tan [y =] 11.8 \div 15.2$

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