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CAMBRIDGE INTERNATIONAL MATHEMATICS **0607/33**

Paper 3 (Core) **October/November 2017**

MARK SCHEME

Maximum Mark: 96

Published

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MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

Types of mark

M Method marks, awarded for a valid method applied to the problem.

A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.

B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation '**dep**' is used to indicate that a particular M or B mark is dependent on an earlier mark in the scheme.

Abbreviations

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

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Question	Answer	Marks	Partial Marks
1(a)	Radius Sector Chord Tangent	**4**	**B1** for each
1(b)	56 to 60	**1**	
2	19, 15, 11	**1**	
	÷2 oe	**1**	
	22, 67, 202	**2**	**B1** for 1 value correct
3(a)(i)	13	**1**	
3(a)(ii)	13.3	**1**	
3(b)	8 – 26 – 7 22 23 – –	**3**	**B2** for 3 or 4 correct or **B1** for 1 or 2 correct
3(c)	Two of 60, 216, 84 seen	**B3**	**B2** for 1 angle correct or **M1** for 360 ÷ 30 soi by 12
	3 correct sectors drawn	**B1**	
	Correct labels	**B1**	**FT** if 3 sectors in approx. correct proportions
4(a)	7061	**1**	
4(b)(i)	Any multiple of 9	**1**	
4(b)(ii)	One of 22, 24, 26, 28	**1**	
4(c)(i)	25	**1**	
4(c)(ii)	1331	**1**	
4(c)(iii)	16	**1**	
4(d)	$3\times(6+5)-4=29$	**1**	
4(e)	2.55	**2**	**B1** for 2.545…
4(f)(i)	0.0316	**1**	
4(f)(ii)	3.1626×10^{-2}	**1**	**FT** from (f)(i)
5(a)(i)	08 55 oe	**1**	
5(a)(ii)	70	**2**	**M1** for 105 ÷ 1h 30min soi
5(b)(i)	3	**2**	**M1** for 104 × 0.03 oe soi by 3.12

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Question	Answer	Marks	Partial Marks
5(b)(ii)	39	**2**	**M1** for 104 ÷ (5 + 3) soi If zero scored **SC1** for answer 65
6(a)	280	**2**	**M1** for (16 + 4) × (4 + 10)
6(b)	116	**4**	**M3** for $20\times14-\left(\left(\frac{1}{2}\times10\times20\right)+\left(\frac{1}{2}\times8\times16\right)\right)$ or **M2** for $\frac{1}{2}\times10\times20$ and $\frac{1}{2}\times8\times16$ or **M1** for $\frac{1}{2}\times10\times20$ or $\frac{1}{2}\times8\times16$ **A1** for 100 or 64 OR **M3** for $\frac{1}{2}\times(8+10)\times4+4\times20$ oe or **M2** for $\frac{1}{2}\times(8+10)\times4$ or **M1** 4×20
6(c)	$\frac{29}{70}$	**2**	**M1** for $\frac{\textit{their}(\text{b})}{\textit{their}(\text{a})}$
6(d)	Trapezium	**1**	
	Parallelogram	**1**	
7	[x =] 14	**1**	
	[y =] 9	**2**	**M1** for (32 − *their* x) ÷ 2
	[z =] –1	**1**	
8(a)(i)	56	**1**	
8(a)(ii)	[0].56	**1**	**FT** *their*(a)(i) ÷100
8(b)	16	**1**	
8(c)	75, 72, 21	**2**	**B1** for 1 or 2 values correct
	90, 74, *their*16	**1**	**FT**
8(d)	Similar	**1**	
9(a)	6 3 8 7	**2**	**B1** for 2 or 3 values correct
9(b)	24	**1**	**FT** *their* diagram

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Question	Answer	Marks	Partial Marks
9(c)	$\frac{8}{their(b)}$	**1**	**FT**
10	250 or 250.2 to 250.3	**3**	**M2** for $78 + 78 + \pi \times 30$ oe or **M1** for $\left[\frac{1}{2}\times\right]\pi\times 30$
11(a)	$5(x - 3)$ final answer	**1**	
11(b)	3	**3**	**M1** for $12x - 8 = 28$ or $3x - 2 = 7$ **M1** for $12x = 28 + 8$ or $3x = 7 + 2$ oe
11(c)	$\frac{6b}{a}$ or $6ba^{-1}$	**2**	**M1** for any correct cancelling once
11(d)	Enclosed circle and indication from 3 to the left	**1**	
11(e)	$x > 1\frac{1}{2}$ oe	**2**	**B1** for $7x - 3x > 6$ oe
11(f)	$x = 6,\ y = -1$	**2**	**B1** for each If zero scored **SC1** for correct sub. and evaluation to find *their* other variable
12	HCF = 18 LCM = 216	**4**	**B2** for each or **B1** for $2 \times 3 \times 3 \times 3$ oe **B1** for $2 \times 4 \times 3 \times 3$ oe If 0 scored **SC2** for correct answers reversed or **SC1** for answer HCF = 3, 6 or 9 and **SC1** for answer LCM any multiple of 216 (eg 3888)
13(a)	Complete, correct tree	**2**	**B1** for $\frac{5}{6}$ correctly placed once
13(b)	$\frac{35}{36}$	**3**	**M2** for $\frac{1}{6}\times\frac{5}{6}+\frac{1}{6}\times\frac{5}{6}+\frac{5}{6}\times\frac{5}{6}$ or $1-\left(\frac{1}{6}\times\frac{1}{6}\right)$ or **M1** for $\frac{1}{6}\times\frac{5}{6}$ or $\frac{1}{6}\times\frac{5}{6}$ or $\frac{5}{6}\times\frac{5}{6}$
14(a)	(0, 3)	**1**	
14(b)	5.66 or 5.656 to 5.657	**2**	**M1** for $4^2 + 4^2$

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Question	Answer	Marks	Partial Marks
14(c)	1	**2**	**M1** for any correct $\frac{\text{rise}}{\text{run}}$
14(d)	[1]x + 3	**2**	**FT** *their m* from *their* (c) **B1** for mx + 3 or [1]x + c
15(a)	Correct sketch	**2**	**M1** for correct U shape or for minimum to right of y-axis and curve intersects y-axis below origin
15(b)	2.5 and −0.25 oe	**2**	**B1** for one value correct

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