

CAMBRIDGE INTERNATIONAL EXAMINATIONS**Cambridge International General Certificate of Secondary Education****MARK SCHEME for the May/June 2015 series****0607 CAMBRIDGE INTERNATIONAL MATHEMATICS****0607/33****Paper 3 (Core), maximum raw mark 96**

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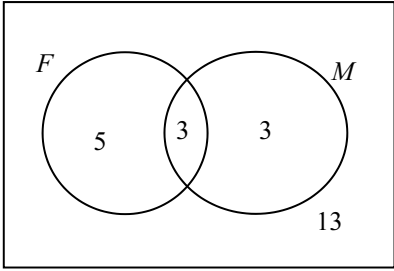
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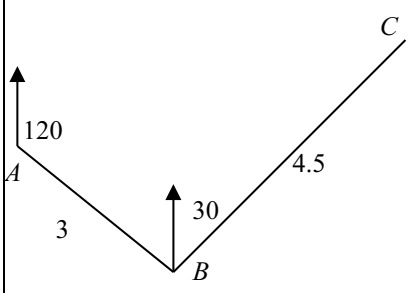
Abbreviations

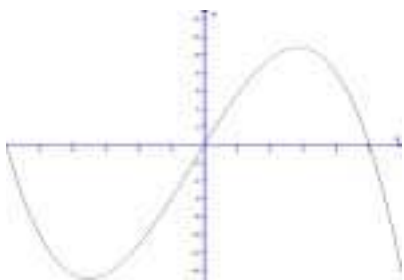
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfw	not from wrong working
soi	seen or implied

1	(a)	12, 14 or 16	1	
	(b)	13	1	
	(c)	14	1	
	(d)	12 or 14	1	
	(e)	16	1	
	(f)	15	1	
2	(a)	6.21 or 6.207 to 6.208	1	
	(b)	144	1	
	(c) (i)	348.4	1	
	(ii)	350	1	
	(d)	0.3 33% 3.33×10^{-1} $\frac{1}{3}$	2	B1 for 2 numbers in correct place
3	(a)	35	1	
	(b) (i)	40	1 FT	FT 75 – <i>their</i> (a)
	(ii)	114% or 114.2 to 114.3	2 FT	M1 for <i>their</i> $\frac{40}{35}$
	(c) (i)	60	2	M1 for finding 20% of 75 or 0.8×75 oe
	(ii)	20	2 FT	B1 for 4.80 seen or 480

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4	(a)	4 1 2 8 9 5 2 5 5 6 9 6 2 3 4 4 5 5 7 3 3 3 7 8	3	B2 for 1 misplaced or omitted B1 for correct but not ordered or for 1 row correct
	(b) (i)	burger	1	
	(ii)	22	2	M1 for $\frac{132}{360} \times 60$ oe
5	(a) (i)	16	1	
	(ii)	4	2	M1 for correct first step
	(b) (i)	−5.46	2	M1 for $3.4(-2.1) + 2.8(0.6)$ or B1 for −7.14 or 1.68 seen
	(ii)	$[N=] \frac{M - 3.4L}{2.8}$	2	M1 for a correct rearrangement M1 for correct division by 2.8
	(c) (i)	n^{12}	1	
	(ii)	$4y^6$	2	B1 for $4y^k$ or ky^6
6	(a)	Correct shapes	2	B1 for each
	(b)	6, 9, 12, 15, 18	2	B1 for 3 correct FT <i>their</i> areas for shapes 5 and 6
	(c)	$3n$ oe	1	
7	(a)	3 2 4 6 1	2	B1 for 3 correct
	(b) (i)	5	1	
	(ii)	6	1	
	(iii)	4	1	
	(iv)	3.73 or 3.727 ...	2	M1 for <i>their</i> $\sum fx \div 22$
	(v)	3	2	M1 $Q_1 = 2$ or $Q_3 = 5$

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8 (a)		2	M1 for 2 areas with correct numbers
(b) (i)	5	1 FT	
(ii)	13	1 FT	
9 (a)	$\begin{bmatrix} 2 \\ 3 \end{bmatrix}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{1}{4}$ $\frac{9}{10}$ $\frac{1}{10}$	3	B1 for each branch
(b)	$\frac{1}{30}$ oe	2	M1 for <i>their</i> $\left(\frac{1}{3} \times \frac{1}{10}\right)$
(c)	$\frac{4}{5}$ oe	3	M2 for $\frac{2}{3} \times \text{their } \frac{3}{4} + \text{their } \left(\frac{1}{3} \times \frac{9}{10}\right)$ M1 for $\frac{2}{3} \times \text{their } \frac{3}{4}$ or <i>their</i> $\left(\frac{1}{3} \times \frac{9}{10}\right)$ seen
10 (a) (i)	$\frac{3}{4}$ oe	1	
(ii)	(0, 2)	1	
(iii)	$\left(-\frac{8}{3}, 0\right)$ oe	2	M1 for $\frac{3}{4}x = -2$ or correct sketch
(b)	$y = \frac{3}{4}x - 3$ oe	1	

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11	(a)		2	B1 for 2 correct	
	(b)		2	M1 $\sqrt{3^2 + 4.5^2}$	
	(c)		3	M1 for $\tan x = \frac{4.5}{3}$ oe M1 for $120 - \text{their } 56.3$	
12	(a)	50.3 or 50.26 to 50.27	2	M1 for $2 \times \pi \times 8$	
	(b)	201 or 201.0 to 201.1	2	M1 for $\pi \times 8^2$	
	(c)	$\frac{360}{8} [= 45]$	1		
	(d)	67.5	2	M1 for $180 - 45$	
	(e)	135	1		
	(f) (i)	$\sin 22.5 = \frac{x}{8}$ oe 6.122 to 6.123	M1 A1		
	(ii)	22.6 or 22.62 to 22.63	4	M3 for $\frac{1}{2}\sqrt{8^2 - 3.06^2} \times 6.12$ oe or M2 for $\sqrt{8^2 - 3.06^2}$ or M1 for implicit version	
	(iii)	181 or 180.8 to 181.0	1 FT	FT from <i>their</i> (f)(ii) $\times 8$	

Page 6	Mark Scheme	Syllabus	Paper
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13 (a)		2	B1 for correct cubic shape min then max
(b) (i)	(-6, 0) (0, 0) (5, 0)	2	B1 for 2 correct
(ii)	(-3.51, -14.9) or (-3.513.., -14.88 to -14.87)	2	B1 for each co-ordinate
(c)	-14.9	1 FT	