

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

Cambridge International General Certificate of Secondary Education

**MARK SCHEME for the October/November 2015 series**

**0607 CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/32**

Paper 3 (Core), maximum raw mark 96

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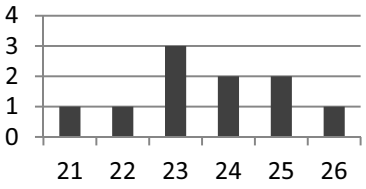
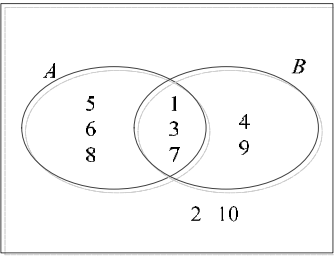
Page 2	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	32

**Abbreviations**

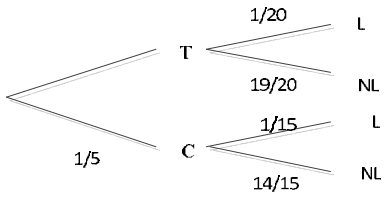
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
oe	or equivalent
SC	Special Case
nfw	not from wrong working
soi	seen or implied

<b>1</b>	<b>(a)</b> 2, 3, 6, 9	<b>1</b>	
	<b>(b) (i)</b> 26	<b>1</b>	
	<b>(ii)</b> 300.763	<b>1</b>	
	<b>(iii)</b> 12.8 or 12.76...	<b>2</b>	<b>B1</b> for 37.4 seen
	<b>(c) (i)</b> 807.54 cao	<b>1</b>	
	<b>(ii)</b> 807.5 cao	<b>1</b>	
	<b>(iii)</b> 810 cao	<b>1</b>	
	<b>(iv)</b> 800 cao	<b>1</b>	
<b>2</b>	$a = 48$ $b = 44$ $c = 44$ $d = 88$	<b>1</b> <b>1</b> <b>1 FT</b> <b>1 FT</b>	<b>FT</b> <i>their (b)</i> <b>FT</b> $180 - 48 - \textit{their } 44$ or $180 - \textit{their (a)} + \textit{their (b)}$
<b>3</b>	<b>(a)</b> 36	<b>2</b>	<b>M1</b> for 25 or 4 seen
	<b>(b)</b> 17.8 or 17.77...	<b>3</b>	<b>M2</b> for $\frac{5300 - 4500}{4500} \times 100$ oe or <b>M1</b> for $\frac{5300 - 4500}{4500}$ or $\frac{5300}{4500} \times 100$
<b>4</b>	<b>(a) (i)</b> 19.2	<b>1</b>	
	<b>(ii)</b> 18.4	<b>1</b>	
	<b>(b)</b> 0.5 0.4	<b>1</b> <b>1</b>	If 0 scored <b>SC1</b> if reversed
	<b>(c)</b> 64 64	<b>1</b> <b>1</b>	
	<b>(d)</b> 147.2[0]	<b>2 FT</b>	<b>M1</b> for <i>their</i> $64 \times [0].95$ and <i>their</i> $64 \times 1.35$ oe

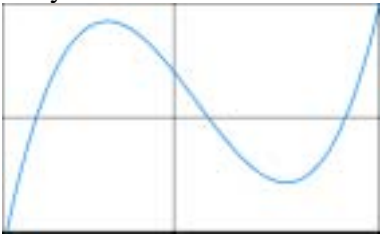
Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	32

5	(a) (i) 5 (ii) 23 (iii) 23.5 oe (iv) 23.6 (b) 	1 1 1 1 2	<b>B1</b> for 4 correct bars
6	(a) 150 (b) 300 (c) [0].65 (d) [0].75	1 1 FT 2 1	<b>FT</b> <i>their</i> (a) $\times 2$ <b>M1</b> for $2 \times 1.45 + [0].7[0]$ or better
7	(a) $F + 2M$ (b) 15 (c) 9	2 2 FT 2 FT	<b>B1</b> for $2M$ seen <b>M1</b> for correct substitution in <i>their</i> formula <b>M1</b> for correct substitution in <i>their</i> formula
8	(a)  (b) (i) 1 3 7 (ii) 2 10 (iii) 4 9 (c) (i) $\frac{5}{10}$ oe (ii) $\frac{3}{10}$ oe (iii) $\frac{4}{10}$ oe	2 1 FT 1 FT 1 FT 1 1 1	<b>B1</b> for 2 correct regions

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	32

9	(a) 33 46	1 1	
	(b) $n^2 - 3$	3	<b>B2</b> for $n^2 \pm k$ or <b>M1</b> for finding second differences or any quadratic
10	(a) 	3	<b>B1</b> for each branch
	(b) $\frac{4}{100}$ oe	2	<b>M1FT</b> for $\frac{4}{5} \times their \frac{1}{20}$
	(c) $\frac{71}{75}$ or 0.947 or 0.9466...	3	<b>M2</b> for $\frac{4}{5} \times their \frac{19}{20} + their \left(\frac{1}{5} \times \frac{14}{15}\right)$ or <b>M1</b> for $\frac{4}{5} \times their \frac{19}{20}$ or $their \left(\frac{1}{5} \times \frac{14}{15}\right)$
11	(a) Vertices at (3, 1) (3, 2) (4, 2) (4, 4) (5, 4) (5, 1)	2	If 0 scored <b>SC1</b> for reflection in $y = 1$ or $x = 0$
	(b) Vertices at (-5, -2) (-3, -1) (-4, -1) (-4, 1) (-5, -1) (-3, -2)	2	If 0 scored <b>SC1</b> for translation of $\begin{pmatrix} -2 \\ k \end{pmatrix}$ or $\begin{pmatrix} k \\ -3 \end{pmatrix}$ or $\begin{pmatrix} -3 \\ -2 \end{pmatrix}$
	(c) Vertices at (1, -1) (1, -2) (2, -2) (3, -1) (2, -4) (3, -4)	2	If 0 scored <b>SC1</b> for any rotation about (0, 0) or a rotation of $180^\circ$
12	(a) Points plotted correctly	2	<b>B1</b> for each point
	(b) (5, 0)	2	<b>B1</b> for each co-ordinate If 0 scored <b>SC1</b> for (0, 5)
	(c) 8.49	3	<b>M1</b> for $\sqrt{6^2 + 6^2}$ or better <b>A1</b> for 8.485 to 8.486
	(d) -1	2	<b>M1</b> for $\frac{\text{rise}}{\text{run}}$
	(e) $y = -x + 5$ oe	2 FT	<b>M1</b> for $[y = ] -x + k$ or $x + y = k$ <b>FT</b> from (d)

Page 5	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2015	0607	32

13 (a)	72	1	
(b)	108	2	<b>M1</b> for $\frac{2(180 - \text{their } 72)}{2}$ or $180 - \frac{360}{5}$ oe or <b>B1</b> for 54
(c)	4.13 or 4.129...	2 FT	<b>M1</b> for $\tan 54 = \frac{r}{3}$ oe <b>FT</b> $\frac{\text{their angle in (a)}}{2}$ or $\frac{\text{angle in (b)}}{2}$
(d)	61.9 – 62.[0]	3 FT	<b>M2</b> for $\left(\frac{1}{2} \times 6 \times \text{their } 4.13\right) \times 5$ or <b>M1</b> for $\frac{1}{2} \times 6 \times \text{their } 4.13$
14 (a)	Fully correct curve 	2	<b>B1</b> for correct cubic shape (maximum then minimum)
(b) (i)	(-4, 0) (1, 0) (5, 0)	2	<b>B1</b> for 2 correct
(ii)	(0, 10)	1	
(iii)	(3.27, -14.3) or (3.270.., -14.28 to -14.27)	2	<b>B1</b> for each co-ordinate