



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

---

**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/61**

Paper 6 (Extended)

**October/November 2016**

MARK SCHEME

Maximum Mark: 40

---

**Published**

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2016 series for most Cambridge IGCSE<sup>®</sup>, Cambridge International A and AS Level components and some Cambridge O Level components.

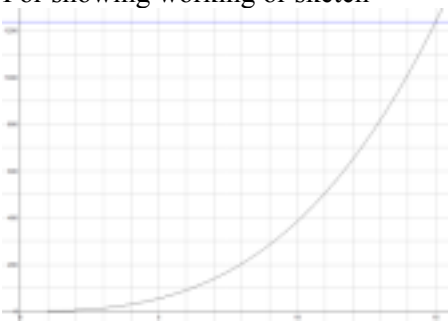
® IGCSE is the registered trademark of Cambridge International Examinations.

---

This document consists of **5** printed pages.



Page 3	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	61

Question	Answer	Mark	Part Marks
(b)	$T = \frac{1}{3} 10^3 + \frac{1}{2} 10^2 + \frac{1}{6} 10$ leading to 385	1	
(c)	15	1	C opportunity
4	$n$	1	
5 (a)	11	1	
(b)	<div> <div>2 by 1</div> <div>2 by 2</div> <div>2 by 3</div> <div>2 by 4</div> <div>2 by 5</div> <div>2 by <math>n</math></div> </div> <div> <div>2</div> <div>4</div> <div>6</div> <div>8</div> <div>10</div> <div><math>2n</math></div> </div> <div> <div>0</div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div><math>n - 1</math></div> </div> <div> <div>2</div> <div>5</div> <div>8</div> <div>11</div> <div>14</div> <div><math>3n - 1</math></div> </div> <div> <div>oe</div> </div>	<div>1</div> <div>1</div>	
6	<div> <div>3 by 1</div> <div>3 by 2</div> <div>3 by 3</div> <div>3 by 4</div> <div>3 by 5</div> <div>3 by <math>n</math></div> </div> <div> <div>3</div> <div>6</div> <div>9</div> <div>12</div> <div>15</div> <div><math>3n</math></div> </div> <div> <div>0</div> <div>2</div> <div>4</div> <div>6</div> <div>8</div> <div><math>2n - 2</math></div> </div> <div> <div>0</div> <div>0</div> <div>1</div> <div>2</div> <div>3</div> <div><math>n - 2</math></div> </div> <div> <div>3</div> <div>8</div> <div>14</div> <div>20</div> <div>26</div> <div><math>6n - 4</math></div> </div> <div> <div>oe</div> </div>	<div>2</div>	<b>B1</b> for rows 4 or 5 correct <b>B1 FT</b> for <i>their</i> linear expressions in columns 3, 4 and 5
7	$[n] < 3$ oe	1	C opportunity
<b>Communication:</b> Seen in two of the following questions  2 (c) For showing $91 + 49 + 64$ or $1 + 4 + 9 + 16 + 25 + 36 + 49 + 64$ or in tabular form  3 (a) For showing working of a correct method  3 (c) For showing working or sketch 		1	
7	For $< 2$ in 2 by something and $< 3$ in 3 by something oe		

Page 4	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	61

B MODELLING MEASURING ROD			
Question	Answer	Mark	Part Marks
1 (a)	Cylinder	1	
(b)	152.7...cm oe	2	<b>M1</b> for $\frac{1200}{\pi \times 0.5^2}$ oe
2 (a)	Must be able to hold it oe	1	
(b) (i)	50	1	
(ii)	Cross-section narrows oe	1	
3 (a)	$\frac{1}{2} \times 50 \times 50 \times \sin x$	1	
(b)	$\frac{x}{360} \times \pi \times 50^2$	1	
	21.81x to 21.82x	1	
(c)	21.8x – 1250sinx isw	1	
(d)	their 3(c) $\times 153$	1	<b>FT</b> their 3(c)
(e)	Correct curve	2	<b>B1</b> for correct shape <b>B1</b> for passing through approximately (80, 79 000) and approximately (150, 406 000)
(f) (i)	132 to 132.2	1	C opportunity
(ii)	29.6 to 29.75	2	<b>FT</b> their f(i) in $\cos\left(\frac{f(i)}{2}\right)$ <b>FT M1</b> for $50 \times \cos\left(\text{their } \frac{132}{2}\right)$ oe C opportunity
(g)	70.2 to 70.3	1	<b>FT</b> 100 – their (f(ii))
4	13.7 or 13.74 to 13.75	2	<b>M1</b> for $\cos\left(\frac{\text{their } 87.05}{2}\right) \times 50$ implied by 36.2 to 36.3 C opportunity

Page 5	Mark Scheme	Syllabus	Paper
	Cambridge IGCSE – October/November 2016	0607	61

Question	Answer	Mark	Part Marks
<b>Communication:</b> Seen in one of the following questions		<b>1</b>	
3 (f) (i)	seen in 3(e) For line on graph (sketch) at $V = 300000$		
3 (f) (ii)	For working shown i.e. extra stage like division by 2 or cos <i>their</i> angle		
4	seen in 3(e) For line on graph (sketch) at $V = 100000$ or $x = 87.0[5]$		