

CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International General Certificate of Secondary Education

MARK SCHEME for the May/June 2015 series

0607 CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/51

Paper 5 (Core), maximum raw mark 24

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.

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Page 2	Mark Scheme	Syllabus	Paper
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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

<p>1</p> <p>(a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>(e) (i)</p> <p>(ii)</p>	3	1															
		1															
	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Height</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">6</td> </tr> <tr> <td style="padding: 2px;">Cubes</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">6</td> <td style="padding: 2px;">10</td> <td style="padding: 2px;">15</td> <td style="padding: 2px;">21</td> </tr> </table>	Height	1	2	3	4	5	6	Cubes	1	3	6	10	15	21	2	<p>B1 for 15</p> <p>B1 for 21</p>
	Height	1	2	3	4	5	6										
	Cubes	1	3	6	10	15	21										
	55	1	C opportunity														
13	1	C opportunity															
9	1	FT <i>their</i> (i) if answer <13															
<p>2</p> <p>(a)</p> <p>(b)</p>	16	1															
		1															

Page 3	Mark Scheme	Syllabus	Paper
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	(c)	<table border="1"> <tr> <td>Height</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Cubes</td> <td>1</td> <td>4</td> <td>9</td> <td>16</td> <td>25</td> <td>36</td> </tr> </table>	Height	1	2	3	4	5	6	Cubes	1	4	9	16	25	36	1	B1 for 25 and 36
	Height	1	2	3	4	5	6											
	Cubes	1	4	9	16	25	36											
	(d)	Square [numbers]	1															
(e)	100	1																
(f)	n^2 or $n \times n$ or $1n^2$ cao	1																
3	(a)	6	1	B1 for one of 20, 30, 42 FT double <i>their 1(c)</i> with no errors C opportunity If 0 scored B1 for kn^2 ($k \neq 0$)														
	(b)	<table border="1"> <tr> <td>Height</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Cubes</td> <td>2</td> <td>6</td> <td>12</td> <td>20</td> <td>30</td> <td>42</td> </tr> </table>	Height		1	2	3	4	5	6	Cubes	2	6	12	20	30	42	2
	Height	1	2		3	4	5	6										
	Cubes	2	6		12	20	30	42										
	(c)	110	1															
(d) (i)	$n^2 + n$ or $n(n + 1)$ oe	2																
(d) (ii)	15	1																
(e)	DOUBLE staircase = UP AND DOWN staircase + height (number of steps) oe	1																
4	(a)	Double staircase = 2 times UP staircase oe	1	FT $\frac{1}{2} \times \text{their 3(d)(i)}$														
	(b)	$\frac{1}{2}n^2 + \frac{1}{2}n$ or $n \times \frac{1}{2}n + \frac{1}{2}n$ oe	1FT															
Communication seen in two of 1(d), 1(e)(i), 3(c), 3(d)(ii)			1															