



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

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/51**

Paper 5 (Core)

**May/June 2016**

MARK SCHEME

Maximum Mark: 24

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**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.

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**Abbreviations**

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

<b>Question</b>	<b>Answer</b>	<b>Mark</b>	<b>Part Marks</b>
<b>1 (a)</b>	3	<b>1</b>	
<b>(b)</b>	2	<b>1</b>	
<b>(c)</b>	40	<b>1</b>	
<b>(d)</b>	15	<b>1</b>	C opportunity
<b>2 (a)</b>	$\frac{9}{3}$ [= 3] and $\frac{3}{1}$ [= 3] oe seen	<b>1</b>	
<b>(b)</b>	$\frac{3}{2}$ or 1.5 and $\frac{2}{1}$ or 2 oe and No oe	<b>1</b>	
<b>(c) (i)</b>	147	<b>1</b>	C opportunity
<b>(ii)</b>	21 by 150 or 150 by 21	<b>1</b>	FT <i>their(i)</i>
<b>(d) (i)</b>	15	<b>1</b>	C opportunity
<b>(ii)</b>	15 by 78 or 78 by 15	<b>1</b>	FT <i>their(i)</i>
<b>3 (a) (i)</b>	12	<b>1</b>	C opportunity
<b>(ii)</b>	72	<b>1</b>	C opportunity
<b>(iii)</b>	36	<b>1</b>	FT $\frac{their(ii)}{2}$
<b>(iv)</b>	$n^2$ oe	<b>1</b>	
<b>(b) (i)</b>	3	<b>1</b>	C opportunity
<b>(ii)</b>	6 by 20 or 20 by 6	<b>1</b>	C opportunity

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Question	Answer	Mark	Part Marks																																			
(c)	<table border="1"> <thead> <tr> <th><math>n</math></th> <th><math>x</math></th> <th><math>y</math></th> <th><math>z</math></th> <th>Dimensions</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>2</td> <td>4</td> <td>8</td> <td>4 by 10</td> </tr> <tr> <td>6</td> <td>2</td> <td><i>their</i> 12</td> <td><i>their</i> 72</td> <td><b>12* by 74*</b></td> </tr> <tr> <td><i>their</i> 3</td> <td>2</td> <td><i>their</i> 6</td> <td>18</td> <td><i>their</i> <math>y</math> by 20</td> </tr> <tr> <td>5</td> <td>7</td> <td><b>35</b></td> <td><b>175</b></td> <td><b>35* by 182*</b></td> </tr> <tr> <td><b>4</b></td> <td>1</td> <td>4</td> <td>16</td> <td>4 by 17</td> </tr> <tr> <td><b>2</b></td> <td>5</td> <td><b>10</b></td> <td>20</td> <td><b>10* by 25</b></td> </tr> </tbody> </table>	$n$	$x$	$y$	$z$	Dimensions	2	2	4	8	4 by 10	6	2	<i>their</i> 12	<i>their</i> 72	<b>12* by 74*</b>	<i>their</i> 3	2	<i>their</i> 6	18	<i>their</i> $y$ by 20	5	7	<b>35</b>	<b>175</b>	<b>35* by 182*</b>	<b>4</b>	1	4	16	4 by 17	<b>2</b>	5	<b>10</b>	20	<b>10* by 25</b>	3	<p>3 for all 8 cells</p> <p><b>*FT</b> <i>their</i> <math>y</math> by (<i>their</i> <math>z + 2</math>)</p> <p><b>*FT</b> <i>their</i> <math>y</math> by (<i>their</i> <math>z + 7</math>)</p> <p><b>*FT</b> <i>their</i> <math>y</math> by 25</p> <p><b>B2</b> for 6 or 7 cells correct or <b>B1</b> for 4 or 5 cells correct</p>
$n$	$x$	$y$	$z$	Dimensions																																		
2	2	4	8	4 by 10																																		
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<b>2</b>	5	<b>10</b>	20	<b>10* by 25</b>																																		
4 (a)	$nx$ [by] $n^2x + x$ oe	2	<b>B1</b> for each <b>C</b> opportunity																																			
(b)	$nx : (n^2 + 1)x$ oe seen	1																																				
Communication seen in at least 3 of 1(d), 2(c)(i), 2(d)(i), 3(a)(i), 3(a)(ii), 3(b)(i), 3(b)(ii) or 4(a)		2	<b>C1</b> if seen in 2 of these																																			