

**MARK SCHEME for the May/June 2013 series**

**0607 CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/05**

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.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

<p><b>1 (a)</b></p> <table border="1" data-bbox="245 248 767 882"> <thead> <tr> <th>rectangle</th> <th>length (x)</th> <th>width (y)</th> <th>squares passed through (S)</th> </tr> </thead> <tbody> <tr> <td><i>Example</i></td> <td>5</td> <td>3</td> <td>7</td> </tr> <tr> <td><i>A</i></td> <td>3</td> <td>1</td> <td>3</td> </tr> <tr> <td><i>B</i></td> <td>3</td> <td>2</td> <td>4</td> </tr> <tr> <td><i>C</i></td> <td>5</td> <td>4</td> <td>8</td> </tr> <tr> <td><i>D</i></td> <td>7</td> <td>2</td> <td>8</td> </tr> <tr> <td><i>E</i></td> <td>7</td> <td>3</td> <td>9</td> </tr> <tr> <td><i>F</i></td> <td>6</td> <td>5</td> <td>10</td> </tr> <tr> <td><i>G</i></td> <td>7</td> <td>4</td> <td>10</td> </tr> <tr> <td><i>H</i></td> <td>9</td> <td>4</td> <td>12</td> </tr> <tr> <td><i>I</i></td> <td>8</td> <td>5</td> <td>12</td> </tr> </tbody> </table> <p><b>(b)</b> <math>x + y = S + 1</math> o.e.</p> <p><b>(c)</b> <math>[x=]</math> 6 <math>[y=]</math> 1 5 2 4 3</p>	rectangle	length (x)	width (y)	squares passed through (S)	<i>Example</i>	5	3	7	<i>A</i>	3	1	3	<i>B</i>	3	2	4	<i>C</i>	5	4	8	<i>D</i>	7	2	8	<i>E</i>	7	3	9	<i>F</i>	6	5	10	<i>G</i>	7	4	10	<i>H</i>	9	4	12	<i>I</i>	8	5	12		<p><b>8</b></p> <p><b>1</b></p> <p><b>B2FT</b></p>	<p><math>x</math> and <math>y</math> can be swapped in any or all rows.</p> <p>–1 per error or omission</p> <p>Equation required</p> <p><b>B1</b> for 2 correct</p> <p>Communication mark for <math>x + y =</math> <i>their</i> 7 OR 3 correct substitutions in <i>their</i> <b>(b)</b>.</p> <p>Accept <math>x</math> and <math>y</math> reversed Correct answers OR follow-through <i>their</i> <b>(b)</b></p>
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<p><b>2</b></p>	<table border="1" data-bbox="245 1346 668 1839"> <thead> <tr> <th><math>x</math></th> <th><math>y</math></th> <th></th> <th></th> <th>Calculation to find <math>S</math></th> </tr> </thead> <tbody> <tr> <td>10</td> <td>6</td> <td>2</td> <td>5 by 3</td> <td><math>2 \times 7 = 14</math></td> </tr> <tr> <td>6</td> <td>2</td> <td>2</td> <td>3 by 1</td> <td><math>2 \times 3 = 6</math></td> </tr> <tr> <td>8</td> <td>6</td> <td>2</td> <td>4 by 3</td> <td><math>2 \times 6 = 12</math></td> </tr> <tr> <td>25</td> <td>15</td> <td>5</td> <td>5 by 3</td> <td><math>5 \times 7 = 35</math></td> </tr> <tr> <td>13</td> <td>13</td> <td>13</td> <td>1 by 1</td> <td><math>13 \times 1 = 13</math></td> </tr> </tbody> </table>	$x$	$y$			Calculation to find $S$	10	6	2	5 by 3	$2 \times 7 = 14$	6	2	2	3 by 1	$2 \times 3 = 6$	8	6	2	4 by 3	$2 \times 6 = 12$	25	15	5	5 by 3	$5 \times 7 = 35$	13	13	13	1 by 1	$13 \times 1 = 13$	<p><b>B1</b></p> <p><b>B1</b></p> <p><b>B2 FT</b></p> <p><b>B1 FT</b></p> <p><b>B1FT</b></p>	<p>4 common factors 2, 2, 5, 13</p> <p>3 or 4 basic rectangles</p> <p>3 or 4 <i>their</i> factor <math>\times</math> value for calculation OR <b>B1 FT</b> 1 or 2 <i>their</i> factor <math>\times</math> value for calculation</p> <p>Strict <b>FT</b> except decimal answers.</p> <p><b>SC0</b> in this part for the same basic rectangle each time.</p> <p>All 4 multiplications</p> <p><b>SC1</b> in this part for 6, 12, 35, 13 without calculation and no error in table.</p>														
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Page 3	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2013	0607	05

3	<p>[minimum =] 6</p> <p>[maximum =] 18</p>	<p><b>B2</b></p> <p><b>B1</b></p> <p><b>B1</b></p>	<p>1 by 18, 2 by 9, 3 by 6 OR <b>B1</b> for any two</p> <p>soi (e.g. 3 + 6 1, etc.) Accept diagrams in the working space.</p> <p>6 cao</p> <p>18 cao</p> <p>Accept 6 or 18 in wrong answer space.</p> <p>Communication mark for showing numerical method to get 6. e.g. common factor = 3 soi and <math>3 \times (2 + 1 - 1)</math> o.e. Row as in the table.</p>
4	<p>[3 × 2]</p> <p>4 × 1</p> <p>4 × 2</p> <p>4 × 4</p>	<p><b>B1</b></p> <p><b>B1</b></p> <p><b>B1</b></p>	<p>soi by diagrams in the answer space.</p> <p>4 + 1 - 1 = 4 insufficient</p> <p>Deduct 1 for each extra incorrect rectangle but accept repeated rectangles.</p> <p>Communication mark for showing correct numerical method or statement once e.g. <math>x + y - 1 = S</math>, <math>S = 4</math> <math>x + y = 5</math> <math>3 + 2 - 1 = 4</math> but not <math>3 + 2 = 5 - 1 = 4</math> Row as in the table.</p>
	Communication	1	Seen in question 1(c), 3 or 4