

**MARK SCHEME for the May/June 2011 question paper**  
**for the guidance of teachers**

**0607 CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/05**

Paper 5 (Core), maximum raw mark 24

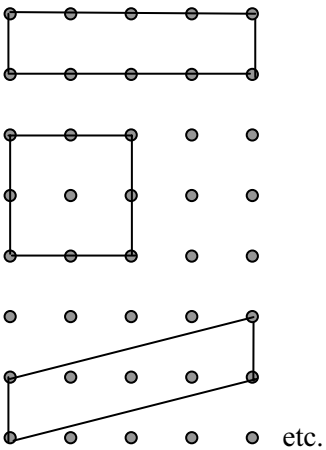
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Mark schemes must be read in conjunction with the question papers and the report on the examination.

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Question	Answer	Mark	Notes	Comments																																																		
<b>1</b>	<table border="1"> <thead> <tr> <th>Figure</th> <th><math>p</math></th> <th><math>i</math></th> <th><math>A</math></th> <th><math>p + 2i - 2</math></th> </tr> </thead> <tbody> <tr> <td><math>Q</math></td> <td>4</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td><math>R</math></td> <td>10</td> <td>2</td> <td>6</td> <td>12</td> </tr> <tr> <td><math>S</math></td> <td>14</td> <td>4</td> <td>10</td> <td>20</td> </tr> <tr> <td><math>T</math></td> <td>8</td> <td>2</td> <td>5</td> <td>10</td> </tr> <tr> <td><math>U</math></td> <td>8</td> <td>5</td> <td>8</td> <td>16</td> </tr> <tr> <td><math>V</math></td> <td>16</td> <td>5</td> <td>12</td> <td>24</td> </tr> <tr> <td><math>W</math></td> <td>18</td> <td>2</td> <td>10</td> <td>20</td> </tr> <tr> <td><math>X</math></td> <td>8</td> <td>1</td> <td>4</td> <td>8</td> </tr> <tr> <td><math>Y</math></td> <td>9</td> <td>1</td> <td><math>4\frac{1}{2}</math></td> <td>9</td> </tr> </tbody> </table>	Figure	$p$	$i$	$A$	$p + 2i - 2$	$Q$	4	0	1	2	$R$	10	2	6	12	$S$	14	4	10	20	$T$	8	2	5	10	$U$	8	5	8	16	$V$	16	5	12	24	$W$	18	2	10	20	$X$	8	1	4	8	$Y$	9	1	$4\frac{1}{2}$	9	10	B10	Deduct one for each wrong or omitted entry up to the maximum of 10
Figure	$p$	$i$	$A$	$p + 2i - 2$																																																		
$Q$	4	0	1	2																																																		
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<b>2</b>	$p + 2i - 2 = 2A$ oe	1	B1	Condone bad form																																																		
<b>3</b>	$p = 18$ $i = 15$ $18 + 2 \times 15 - 2 (= 46)$ $A = 23$	4	A1 soi M1ft substitution into $p + 2i - 2$ A1 cao  C1 Evidence of using areas	23 SC1 (if C1 not given)  e.g. counting squares must be for the pentagon																																																		
<b>4</b>	$7 + 2 \times 4 - 2$ s.o.i. $A = 6\frac{1}{2}$	2	M1 A1 OR B2	13 implies M1  Communication for three terms seen																																																		

<p>5 (a)</p> <p>One from  <math>p = 10 \quad i = 0</math>  <math>p = 8 \quad i = 1</math>  <math>p = 4 \quad i = 3</math></p> <p>(b)</p>  <p>etc.</p>		<p>1</p> <p>1</p>	<p>B1 isw</p> <p>B1</p>	<p>Communication for evidence of using (maybe correctly) <math>p + 2i - 2 = 8</math> or <math>p + 2i = 10</math></p> <p>Other quadrilaterals are possible</p> <p>Corresponding to their correct <math>p</math> and <math>i</math></p> <p>If (a) wrong or omitted:  accept a different quadrilateral from that in the question with <math>p = 6</math> and <math>i = 2</math></p>
<p>6</p>	<p><math>p = 2</math> gives a line oe</p>	<p>1</p>	<p>R1</p>	<p><math>p = 3</math> is the smallest value to give an area  Reference must be made to dots or <math>p</math></p>
<p>7</p>	<p>(p) 4 6 8 10 12 14  (i) 5 4 3 2 1 0</p>		<p>B3</p>	<p><math>+\frac{1}{2}</math> for each correct pair.  <math>-\frac{1}{2}</math> for each wrong pair. Round down</p> <p>Communication for reasoning using Pick's equation</p>
		<p>1</p>	<p>C1 for one communication mark in questions 4, 5(a) or 7</p>	