

**MARK SCHEME for the May/June 2012 question paper**  
**for the guidance of teachers**

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

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

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<b>Qu.</b>	<b>Answer</b>	<b>Mark</b>	<b>Notes</b>	<b>Comments</b>																								
<b>1</b>	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5) (1, 5, 6) (2, 4, 6) (1, 6, 7) (2, 5, 7)	<b>3</b>	<b>B1</b> for 4 or 5 <b>B2</b> for 6 or 7	First two numbers can be swapped																								
<b>2</b>	(1, 2, 3) (1, 3, 4)	<b>1</b>	cao																									
	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5)	<b>2</b>	cao <b>B1</b> for any 3																									
	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5) (1, 5, 6) (2, 4, 6)	<b>2</b>	cao <b>B1</b> for any 5																									
	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5) (1, 5, 6) (2, 4, 6) (1, 6, 7) (2, 5, 7) (3, 4, 7) (1, 7, 8) (2, 6, 8) (3, 5, 8)	<b>2</b>	<b>B1</b> for any 10	Communication for systematic setting: ascending order within each triple <b>and</b> first or last numbers in order (after repeating previous set)																								
<b>3</b>	<table border="1" style="width: 100%; text-align: center;"> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>9</td><td>12</td><td>16</td><td>20</td><td>25</td><td>30</td><td>36</td><td>42</td><td>49</td></tr> </table>	4	5	6	7	8	9	10	11	12	13	14	15	2	4	6	9	12	16	20	25	30	36	42	49	<b>2</b>	<b>B1</b> for 3	ft the numbers from their table unless wrongly counted.
4	5	6	7	8	9	10	11	12	13	14	15																	
2	4	6	9	12	16	20	25	30	36	42	49																	
<b>4</b>	<table border="1" style="width: 100%; text-align: center;"> <tr><td>3</td><td>5</td><td>7</td><td>9</td><td>11</td><td>13</td><td>15</td><td>17</td></tr> <tr><td><math>1 = 1^2</math></td><td><math>[4 = ] 2^2</math></td><td><math>3^2</math></td><td><math>4^2</math></td><td><math>[25 = ] 5^2</math></td><td><math>36 = 6^2</math></td><td><math>[49 = ] 7^2</math></td><td><math>[64 = ] 8^2</math></td></tr> </table>	3	5	7	9	11	13	15	17	$1 = 1^2$	$[4 = ] 2^2$	$3^2$	$4^2$	$[25 = ] 5^2$	$36 = 6^2$	$[49 = ] 7^2$	$[64 = ] 8^2$	<b>2</b>	<b>B1</b> for 3									
3	5	7	9	11	13	15	17																					
$1 = 1^2$	$[4 = ] 2^2$	$3^2$	$4^2$	$[25 = ] 5^2$	$36 = 6^2$	$[49 = ] 7^2$	$[64 = ] 8^2$																					
<b>5</b>	21	<b>2</b>	<b>B1</b> $10^2$ soi	Communication: Table extension OR $\sqrt{100} = 10$ oe <b>and</b> $10 \times 2 = 20$ OR $10 + 11 = 21$																								

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<b>6 (a)</b>	Yes, $15^2 = 225$ soi	<b>1</b>		Accept Yes, 31 [integers] OR Yes, $\sqrt{225}$ is a whole number OR Yes, 225 is a square
	<b>(b)</b> Is not a square	<b>2</b>	<b>M1</b> 948.6...  <b>SC1</b> $\sqrt{900000}$ does not exist OR does not have a square root oe	Accept $\sqrt{900\ 000}$ is a not whole number OR 900 000 is not $300^2$ and not $3000^2$ OR does not have an exact square root OR is a decimal OR 900000 is in between $898704 = 948^2$ and $900601 = 949^2$
<b>7 (a)</b>	2401	<b>2</b>	<b>M1</b> for 49 or 49.5 soi	Accept $49^2$  Communication: $98/2 = 49$ or $99/2 = 49.5$ <b>and</b> $49^2 = 2401$ OR correct table extension!
	<b>(b)</b> 2450 cao	<b>2</b>	<b>M1</b> $50^2 - 50$ oe soi OR $49^2 + 49$ OR their $2401 + 49$	
	Communication	<b>1</b>		Communication seen in questions <b>2, 5 or 7(a)</b>