

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

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.

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Qu.	Answer	Mark	Notes	Comments																								
1	(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	B1 for 4 or 5 B2 for 6 or 7	First two numbers can be swapped																								
2	(1, 2, 3) (1, 3, 4)	1	cao																									
	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5)	2	cao B1 for any 3																									
	(1, 2, 3) (1, 3, 4) (1, 4, 5) (2, 3, 5) (1, 5, 6) (2, 4, 6)	2	cao B1 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)	2	B1 for any 10	Communication for systematic setting: ascending order within each triple and first or last numbers in order (after repeating previous set)																								
3	<table border="1"> <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	2	B1 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																	
4	<table border="1"> <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>$1 = 1^2$</td><td>$[4 =] 2^2$</td><td>3^2</td><td>4^2</td><td>$[25 =] 5^2$</td><td>$36 = 6^2$</td><td>$[49 =] 7^2$</td><td>$[64 =] 8^2$</td></tr> </table>	3	5	7	9	11	13	15	17	$1 = 1^2$	$[4 =] 2^2$	3^2	4^2	$[25 =] 5^2$	$36 = 6^2$	$[49 =] 7^2$	$[64 =] 8^2$	2	B1 for 3									
3	5	7	9	11	13	15	17																					
$1 = 1^2$	$[4 =] 2^2$	3^2	4^2	$[25 =] 5^2$	$36 = 6^2$	$[49 =] 7^2$	$[64 =] 8^2$																					
5	21	2	B1 10^2 soi	Communication: Table extension OR $\sqrt{100} = 10$ oe and $10 \times 2 = 20$ OR $10 + 11 = 21$																								

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6	(a)	Yes, $15^2 = 225$ soi	1		Accept Yes, 31 [integer] OR Yes, $\sqrt{225}$ is a whole number OR Yes, 225 is a square
	(b)	Is not a square	2	M1 948.6... SC1 $\sqrt{900000}$ 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 $900601 = 949^2$
7	(a)	2401	2	M1 for 49 or 49.5 soi	Accept 49^2 Communication: $98/2 = 49$ or $99/2 = 49.5$ and $49^2 = 2401$ OR correct table extension!
	(b)	2450 cao	2	M1 $50^2 - 50$ oe soi OR $49^2 + 49$ OR their $2401 + 49$	
		Communication	1		Communication seen in questions 2, 5 or 7(a)