

|    |     |                   |            |                                                                                                                                            |
|----|-----|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 25 | (a) | $5n - 2$          | B2<br>[B1] | for $5n - 2$ oe<br>for $5n + k$ , $k$ may be 0]                                                                                            |
|    | (b) | No<br>(supported) | C1         | for No with evidence, e.g. $3 \times 4^2 = 48$ , $\sqrt{48}$ is not an integer, he has multiplied by 3 first but should have squared first |

|    |     |        |    |                                                                                                      |                                      |
|----|-----|--------|----|------------------------------------------------------------------------------------------------------|--------------------------------------|
| 28 | (a) | 24, 39 | B1 | cao                                                                                                  |                                      |
|    | (b) | $8a$   | M1 | for a complete method to find the next 2 terms,<br>eg. $a + 2a (= 3a)$ <b>and</b> $2a + "3a" (= 5a)$ |                                      |
|    |     |        | A1 | $8a$ oe                                                                                              | SC: B1 for 3, 5, 8 seen if M0 scored |

|   |     |       |    |                                                                                |                                                 |
|---|-----|-------|----|--------------------------------------------------------------------------------|-------------------------------------------------|
| 9 | (a) | 28    | B1 | cao                                                                            |                                                 |
| 9 | (b) | 4 : 9 | M1 | for 8 : 18 or for any ratio equivalent to 4 : 9<br><b>or</b> 9 : 4 or 2.25 : 1 |                                                 |
|   |     |       | A1 | for 4 : 9                                                                      | Accept 4 : 9 in the form 1 : $n$<br>eg 1 : 2.25 |

|   |     |                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                       |
|---|-----|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 9 | (a) | Explanation                           | <p>C2</p> <p>full explanation<br/>eg explains that both 19 and 22 are terms in the sequence<br/><b>or</b> solves <math>3n + 4 = 21</math> to find <math>n = 17/3</math> <b>oe</b></p> <p><b>Acceptable examples</b><br/>19 is in the sequence and <math>19 + 3</math> is more than 21<br/>The 5th term is 19 and the 6th term is 22<br/>7, 10, 13, 16, 19, 22<br/>17 is not in the 3 times table<br/>Because 21 is in the 3 times table and the sequence is plus 4</p> <p>(C1)</p> <p>for substituting to find a term in the sequence<br/><b>or</b> forming an equation eg <math>3n + 4 = 21</math><br/><b>or</b> for a partial explanation or an explanation with some ambiguity)</p> <p><b>Acceptable examples</b><br/>The closest number is 22<br/><math>3 \times 6 = 18</math>, <math>18 + 4</math> is higher than 21<br/>19 is in the sequence so 21 can't be in the sequence.<br/>Starting at 7 and adding 3 each time won't lead to 21<br/>It's the 3 times table plus 4<br/>21 is in the 3 times table</p> <p><b>Not acceptable examples</b><br/>Adding 4 each time won't lead to 21<br/>It doesn't end up at 21, it goes past it</p> | 7, 10, 13, 16, 19, 22, ...                                            |
| 9 | (b) | <p>terms given</p> <p>explanation</p> | <p>B1</p> <p>states two terms eg 7,11 <b>or</b> 8,16 <b>or</b> 5, 7</p> <p>C1</p> <p>explanation eg add one more each time, doubling</p> <p><b>Acceptable examples</b><br/>Add 3 and add 4<br/>The difference goes up by one each time<br/>It doubles<br/><math>+1, +2, +1, +2</math> or indicates <math>+1, +2</math> repeats itself</p> <p><b>Not acceptable examples</b><br/>It goes up by 1 each time<br/>It doubles so <math>2n</math><br/><math>+1, +2, +3, +4</math> so <math>2n + 1</math></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | May be indicated on the sequence with no contradictory statement made |

|    |                      |    |                                                                                                                                                        |                                                       |
|----|----------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 26 | Shown<br>(supported) | M1 | for method to find at least two terms,<br>eg $2 \times 4^2 - 1 (= 31)$ <b>and</b> $40 - 3^2 (= 31)$                                                    | 1 7 17 31 49 71 97 127 161 199<br>39 36 31 24 15 4 -9 |
|    |                      | M1 | for generating at least three correct terms of each sequence                                                                                           |                                                       |
|    |                      | A1 | for generating at least the terms 1, 7, 17, 31, 49 of the first sequence <b>and</b><br>at least the terms 39, 36, 31, 24, 15, 4 of the second sequence |                                                       |

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|    |     |                               |     |                                                                                                                                                       |                                               |
|----|-----|-------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 20 | (a) | $6n + 1$                      | B2  | oe                                                                                                                                                    |                                               |
|    |     |                               | (B1 | for $6n + c$ where $c$ is an integer $\neq 1$ or is missing)                                                                                          |                                               |
|    | (b) | Shown with supportive working | M1  | for $8 - 6n = -58$ or $8 - 6 \times 11 (= -58)$<br><b>or</b> starts to list terms of the sequence, with at least 3 correct or any other valid method. | 2, -4, -10, -16, -22, -28, -34, -40, -46, -52 |
|    |     |                               | A1  | shown with working or an explanation, eg Yes and 11 or 2, -4, -10, -16, ....., -52, -58                                                               | May stop at -58 or ring if sequence continues |