

| Question Number | Scheme | Marks |
|-----------------|---|-------------------|
| 7(a) | (i) $a = 9$ | B1 |
| | (ii) $d = 4$ | B1 (2) |
| (b) | (i) $a = 4$ | B1 |
| | (ii) $r = 3$ | B1 (2) |
| (c) | $A_{14} = \frac{14}{2}(2 \times 9 + 13 \times 4)$ or $\frac{14}{2}(9 + 61)$, = 490 | M1, A1 |
| | "490" - 6 = $\frac{4(3^n - 1)}{3 - 1}$ | M1 |
| | $3^n = 243$ $n = 5$ | ddM1A1 (5) [9] |
| (a) | <p>Correct value, no working or explanation needed</p> <p>Correct value, no working or explanation needed</p> <p>Correct value, no working or explanation needed</p> <p>Correct value, no working or explanation needed</p> <p>Use either formula for the sum of an arithmetic series with their a and d (if needed) and obtain a value for the sum of the first 14 terms</p> <p>Correct value for the sum</p> <p>Subtract 6 from their sum (explicitly or implicitly) and equate to the sum of the first n terms of the geometric series obtained using their a and r</p> <p>Solve their equation by a correct method. No method need be shown but must reach $n = \dots$ Depends on both M marks above</p> <p>Correct value for n obtained</p> <p>For the last 3 marks:</p> <p>Subtract 6 from their sum and generate at least the first 5 terms of the geometric series.</p> <p>Sum their terms until at least "484" is reached</p> <p>Correct answer (5) obtained from correct work.</p> | |
| B1 | | |
| B1 | | |
| (b) | | |
| B1 | | |
| B1 | | |
| (c) | | |
| M1 | | |
| A1 | | |
| M1 | | |
| ddM1 | | |
| A1 | | |
| ALT | | |
| M1 | | |
| ddM1 | | |
| A1 | | |