

1) $t_n = n^2 + \frac{n(n-1)}{2} \rightarrow t_{10} = 100 + 45 = 145$ ✓ (2)

2) $t_n = \frac{n(n-1)}{2} \rightarrow 110 = \frac{n(n-1)}{2} \Rightarrow n=11$ ✓ (2)

3) $t_n = 5n+1 \rightarrow t_{11} = 56$ ✓ (2)

4) $t_n = 5n+1 + 5n-5 = 10n-4 \rightarrow t_{11} = 106$ ✗

5) $n=2 \rightarrow t_2 = \frac{1}{2} \Rightarrow \frac{1}{2} - (-1) = \frac{3}{2}$ ✓ (2)

6) $n=1 \rightarrow t_1 = -1$

7) $b_n = -27 - 21 = -48 \Rightarrow -48 = -2n + 22 \rightarrow 2n = 70 \rightarrow n = 35 \rightarrow k=1$ ✓ (2)

8) $d = \frac{t_n - t_m}{n - m} = \frac{14}{5} = 2.8 \Rightarrow a + 2d - a = 2d \rightarrow 2d = 5.6$ ✓ (2)

9) $d = \frac{t_n - t_m}{n - m} = 2 \Rightarrow a_n = 2n - 1$ (2)

10) $b_n = 11 \Rightarrow b_n = 11n - 8$ ✓

11) $t_8 = \frac{28}{18} \rightarrow t_8 < \frac{5}{2}$ ✓ $t_9 = \frac{34}{14} \rightarrow t_9 > \frac{3}{2}$ ✗ $n < \frac{14}{2} = 7, \dots$ $n < 14$

12) $n \leq 8 \Rightarrow t_n = \frac{4n-1}{n+4} < \frac{1}{2} \rightarrow 4n-1 < \frac{1}{2}(n+4)$ ✓ (2)

13) $4, 9, 9, 9, 4 \Rightarrow t_n = \frac{4}{2}n^2 + \frac{10}{2}n \Rightarrow A + 2B = \frac{4}{2} + \frac{10}{2} = 7$ ✓ (2)

14) $1, 4, 9, 16 \rightarrow t_n = n^2 - n - 4$ $a_n: d = \frac{16}{2} = 8 \Rightarrow a_n = 8n + 1$ (2)

15) $n^2 - n - 4 = 8n + 1 \rightarrow n^2 - 9n - 5 = 0 \rightarrow (n+3)(n-9) \rightarrow n=9$ ✓ $n=-5$ ✗