

1, 5, 12, 22, ...

$$n^2 + \frac{n(n-1)}{2}$$

$$100 + 45 = \boxed{145}$$

1

زنگی: 0, 1, 3, 6, ... $\frac{n(n-1)}{2} = 55 \Rightarrow \boxed{n=11}$

2

نئی: ε_{n+1}

$$\varepsilon_{11+1} = 45 \Rightarrow \text{نہی}$$

سینہ: $(n-1)4$

$$(11-1)4 = 40$$

$$45 + 40 = 85 \Rightarrow \text{نہی}$$

$$15 + 45 = \boxed{130}$$

3

$$d_1 = \frac{(-1)^1}{1} = -1, \quad d_2 = \frac{(-1)^2}{2} = \frac{1}{2}, \quad d_3 = \frac{(-1)^3}{3} = -\frac{1}{3}$$

$d_1 = -1$ کو طے ہے $d_2 = \frac{1}{2}$ بزرگ ہے

$$d_2 - d_1 = \frac{1}{2} - (-1) = \frac{1}{2} + 1 = \frac{3}{2} = \boxed{1.5}$$

4

$$(-2)^r - v(r) = -41 \quad a_k = -\Delta k + 22 \Rightarrow a_k = b_2 \Rightarrow -\Delta k = -v_0 \Rightarrow \boxed{k=14}$$

5

$$a_1 - a_v = 12 \Rightarrow 3d = 12 \Rightarrow d = 4 \Rightarrow a_4 - a_1 = \Delta d = \Delta x \varepsilon = 12 \Rightarrow \boxed{12}$$

$$a_n = a_1 + (n-1)d \Rightarrow a_4 = a_1 + a = v \Rightarrow (a_1 + 3d) - (a_1 + d) = 12 - v \Rightarrow 2d = 12 \Rightarrow d = 4$$

$$a_1 + a = v \quad v - \varepsilon = 3 \quad a_n = 3 + (n-1)4 = 4n - 1 \quad b_4 = a_4 = 3 \quad b_n = b_1 + (n-1)d$$

$$b_1 = 3 - \varepsilon = 1 \quad \boxed{b_n = 4n - 4} \quad a_n = 4n - 1$$

صورت: $d = 4, a_1 = 1$ معبر: $d = 4, b_1 = 1$

$$t_n = \frac{4n-1}{4n+3} < \frac{3}{4}$$

$$4(4n-1) < 3(4n+3)$$

$$16n-4 < 12n+9 \quad 4n < 13 \Rightarrow n < 3.25$$

$n = 1, 2, 3, 4, 5, 6$
 عبارت کوچکتر از ۳/۴ است.

$$t_n = 9, 9, 9, 9, 0 \quad t_n = An^2 + Bn$$

$$\left. \begin{aligned} A(1)^2 + B(1) &= 9 \Rightarrow A+B=9 \\ A(2)^2 + B(2) &= 9 \Rightarrow 4A+2B=9 \end{aligned} \right\} B = 9-A$$

$$4A + 2(9-A) = 9 \Rightarrow 4A + 18 - 2A = 9 \Rightarrow 2A = -9 \Rightarrow A = -4.5$$

$$2A + \Delta B = 2(-4.5) + \Delta(9, \Delta) = -9 + 9\Delta = \boxed{33}$$

$$A+B+C = -4 \quad t_1 = -9 \quad t_2 = -8 \quad t_3 = 0$$

$$4A+2B+C = -8 \quad 2A+B=1, \Delta A+B=8 \Rightarrow A=1 \Rightarrow t_n = n^2 - n - 4$$

$$9A+3B+C = 0 \quad b_n = 24 + \Delta(n-1) = \Delta n + 21 \Rightarrow n^2 - n - 4 = \Delta n + 21 \Rightarrow \Delta n = n^2 - n - 25$$

$$d = \frac{41-21}{4-1} = \Delta$$

$$t_v = v^2 - v - 4 = 49 - 7 - 4 = \boxed{38}$$