

$$\text{الف) } t_n = \underbrace{5, 9, 13, 17, \dots}_{+4 \quad +4 \quad +4} \rightarrow t_n = 4n + 1$$

$$\text{ب) } t_{10} = 4 \times 10 + 1 = 41$$

$$t_n = \underbrace{4, 10, 16, 22, \dots}_{+6 \quad +6 \quad +6}$$

$$\text{الف) } S_n = \frac{n}{2} (2a + (n-1)d) \Rightarrow S_{10} = \frac{10}{2} (2 \times 4 + 9 \times 6) = 250$$

$$\text{ب) } t_1 + t_2 + t_3 + t_4 + t_5 = 5(t_1 + t_5) = 5(4 + 28) = 170$$

$$1 + \sqrt{3}, 2, 3 - \sqrt{3}$$

$$d = 2 - 1 - \sqrt{3} = 1 - \sqrt{3}$$

$$d = \frac{t_m - t_n}{m - n} \Rightarrow 1 - \sqrt{3} = \frac{t_8 - t_3}{5} \Rightarrow t_8 - t_3 = 5 - 5\sqrt{3}$$

$$a_n = \delta^{2x}, 2 \times \delta^{2x}, \delta^y \rightarrow 2b = a + c \Rightarrow 4 \times \delta^{2x} = \delta^{2x} + \delta^y$$

$$b_n = x, 2, y$$

$$\Rightarrow 2 = x + y$$

$$2x + 1 = 2$$

$$2x = 1 \quad x = \frac{1}{2} \quad y = \frac{3}{2}$$

$$xy = \frac{1}{2} \times \frac{3}{2} = \frac{3}{4}$$

$$2x - 4, 2x - 1, 4x, \dots$$

$$2b = a + c \Rightarrow 2x - 1 = 2x - 4 + 4x \Rightarrow 2x = 3 \quad x = \frac{3}{2}$$

$$-3, 0, 3, \dots \quad t_n = 3n - 4 \quad t_5 = 11 - 4 = 7$$

$a_n = \underset{+2}{2}, \delta, V, - \quad a_n = 2n+1$
 $b_n = \underset{+3}{2}, \delta, 1, - \quad b_n = 3n-1$
 $4n-1 \leq 41 \quad 4n \leq 42 \quad n \leq V \rightarrow \boxed{\text{بله } V \text{ شیکرد}}$
 $2, 11, 16, 23, 27, 30, 31$

$$\begin{aligned} a_1 + a_r + a_v &= 1 \\ a_1 + a_r + a_d &= 10d \\ \frac{a_r + a_1}{a_1} &= ? \end{aligned} \quad \begin{aligned} x-d, x, x+d &\Rightarrow \psi x = 1 \quad x = V \Rightarrow a_v = V \\ x-d, x+d, x+Vd &\Rightarrow \psi x + \psi d = 10d \quad x+d = Vd \\ &\quad Vd = 11 \end{aligned}$$

$$\underbrace{x-d, x, x+d}_{1d}, \underbrace{x+rd, x+rd}_{rd} \quad t_{10} = t_1 + 9d = 1 + 9 \times 2 = 19$$

$$\begin{aligned} & x - 4d, x - 3d, x - 2d, x - d, x, x + d, x + 2d, x + 3d, x + 4d \\ & 9x = 9S_p \quad x = S_p \\ & \frac{x - 4d}{S_p} = S_p \quad S_p = 4d \quad x = 4d \quad d = \frac{x}{4} \\ & \frac{a_{10}}{ar} = \frac{a + 9d}{a + 4d} = \frac{\frac{1}{4}x + \frac{9 \cdot 1}{4}x}{\frac{1}{4}x + \frac{1 \cdot 1}{4}x} = \frac{\frac{10}{4}x}{\frac{2}{4}x} = \boxed{5} \end{aligned}$$

$$t_1 = 11 \quad t_2 = 18 \quad d_2 = \frac{18-11}{4} = \frac{7}{4} = 1.75 \quad t_2 = t_1 + 7d = 11 + 17.5 = 28.5$$

$$d_1 = \frac{18-11}{7} = \frac{7}{7} = 1 \quad d_2 = \frac{18-11}{n+1} = \frac{7}{n+1} = 1$$

$$n+1 = 7 \quad n = 6$$