

$$t_1 = \varepsilon_0, t_\varepsilon = 91 \Rightarrow 3d = 21 \Rightarrow d = 7 \Rightarrow t_n = V_n + 33$$

$$201 = V_n + 33 \rightarrow 178 = V_n \Rightarrow \boxed{n = 28}$$

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$$t_1 = 101$$

$$101, 101, \dots, 99V$$

$$\frac{99V - 101}{V} + 1 = 129 \text{ عدد}$$

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$$\left. \begin{array}{l} n=1 \rightarrow a_r + a_r + a_\varepsilon = 9 \\ n=2 \rightarrow a_r + a_\varepsilon + a_d = 0 \end{array} \right\} \xrightarrow{\text{کم کنیم}} \begin{array}{l} a_d - a_r = -9 \\ a + \varepsilon d - a - d = 3d \end{array}$$

$$a_r + a_r + a_\varepsilon = 2a_1 + 9d = 2a - 12 = 9 \Rightarrow a = 9 \Rightarrow d = -2$$

$$a_{17} + a_{11} = 2a + 23d = 12 - 46 = \boxed{-34}$$

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$$t_r = 2^n - 1 = a_1 + 2d$$

$$t_1 = 2^n + 1 = a_1 + 7d$$

$$t_{13} = 2^{13} - 3 = a_1 + 12d$$

$$\Rightarrow \left. \begin{array}{l} t_r + t_{13} = 2t_1 \Rightarrow 2^n - 1 + 2^{13} - 3 = 2(2^n + 1) \\ \Rightarrow 2^n + 2^{13} - 4 = 2^{n+1} + 2 \end{array} \right\}$$

$$2^n + 2^{13} - 2^n - 4 = 2 \Rightarrow 2^{13} - 6 = 2 \Rightarrow 2^{13} = 8 \Rightarrow n = 3$$

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$$a_{12} - a_{10} = 2d = \Delta \rightarrow d = \frac{\Delta}{2}$$

$$a_{12} + a_{10} = 2a_1 + 20d = 2a_1 + 10\Delta = 28 \rightarrow a_1 = -12/5$$

$$a_{11} = a_1 + 2d = -12/5 + 2 \cdot \frac{\Delta}{2} = \boxed{3V/5}$$

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$$\frac{S_{10} - S_0}{S_0} = 3 \Rightarrow \frac{S_{10}}{S_0} - 1 = 3 \Rightarrow \frac{S_{10}}{S_0} = 4$$

$$\frac{\frac{10}{x} \times (2a_1 + 9d)}{\frac{x}{x} \times (2a_1 + 9d)} = 4 \Rightarrow \frac{2a_1 + 9d}{a_1 + 9d} = 4 \Rightarrow 2a_1 + 9d = 4a_1 + 36d \Rightarrow 2a_1 = -27d \Rightarrow a_1 = -\frac{27}{2}d$$
~~$$\frac{a_1 + 9d}{a_1 + 9d} = 4 \Rightarrow a_1 = -\frac{27}{2}d$$~~

$$\frac{a_r}{a_1} = \frac{2a_1}{a_1} = 2$$

$$t_n = t_{n-3} + 1d \Rightarrow t_n = t_n - 3d + 1d \Rightarrow -2d + 1d = 0 \Rightarrow d = 0$$

$$t_9 - t_0 = (t_9 + t_0)(t_9 - t_0) = 1800$$

$$\frac{2t_9 + 18d}{20} \cdot \frac{18d}{20} = 1800$$

$$\frac{1800}{t_9} = \frac{1800}{18d} = \frac{1800}{36} = 50$$

$$\left. \begin{aligned} t_1 &= 2(1 - 9\sqrt{3}) = 2 - 18\sqrt{3} \\ t_{12} &= 2 + \sqrt{3} = t_1 + 18d \end{aligned} \right\} \text{ } \downarrow, \uparrow$$

$$2 + \sqrt{3} = 2 - 18\sqrt{3} + 18d \Rightarrow 18\sqrt{3} = 18d \Rightarrow d = \sqrt{3}$$

$$d = \frac{t_n - t_1}{(n-1)+1} = \frac{2r-2}{(n-1)+1} = \frac{2r}{n} = \frac{1d}{r_{n-1}}$$

$$\frac{18n}{r_{n-1}} = 9 \Rightarrow 18n = 9r_{n-1} \Rightarrow r_n = 9 \Rightarrow n = 3$$

~~$$a_n + a_{n+2} = a_r + a_{14} \Rightarrow n + n + 2 = 3 + 14 \Rightarrow n = 1$$~~

$$a_n + a_{n+2} = a_r + a_{14} \Rightarrow n + n + 2 = 3 + 14 \Rightarrow n = 1$$

$$t_n = a_1 + nd = 2a_1 + 9d \rightarrow 2a_1 = -2d \Rightarrow a_1 = -d$$

$$a_r = a_1 + d = -d + d = 0$$