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$$\begin{aligned} & \left(\begin{array}{l} t_1 = 40 \\ t_2 = 41 \\ t_3 = 40.8 \end{array} \right) \begin{array}{l} 21 \\ 14V \\ 14V \end{array} \\ & \textcircled{21} \end{aligned}$$

✓ ۱، ۱۰

مجموع ۱۲۵

$$91 + 35.1 \quad 1.1, 1.1, \dots, 99V \quad \frac{99V - 1.1}{V} + 1.129 \quad -2$$

$$a_{n+1} \quad a_{n+2} \quad a_{n+3} \quad \frac{1}{2} a_{n+3} - \frac{1}{2} a_{n+1} \Rightarrow a_{n+3} - a_{n+1} \quad -3$$

✓

$$\begin{aligned} n=4 & \Rightarrow a_4 = -12 + 4 = -8 \\ n=10 & \Rightarrow a_{10} = -30 + 4 = -26 \end{aligned}$$

$$\begin{aligned} & \frac{1}{x} \frac{d}{dx} x^{n+1} = \frac{1}{x} \frac{d}{dx} x^n + \frac{1}{x} \frac{d}{dx} x \\ & = \frac{1}{x} x^n = x^{n-1} \Rightarrow f(x^{n+1}) = x^n (x^{n+1}) - x^n \cdot x = x^{2n+1} \end{aligned} \quad -4$$

$$\left. \begin{array}{l} a_{r+1} = r - 1 \\ a_{r+2} = r \\ a_{r+3} = r - 1 \end{array} \right\} \begin{array}{l} r+1+1 \\ r+2+1 \\ r+3+1 \end{array} \quad \textcircled{r} \quad \checkmark$$

$$\begin{aligned} a_{12} - a_{10} &= d \Rightarrow a_{10} = 10 = a + (10-1)d = 10 \\ a_{12} + a_{10} &= 20 \\ \frac{1}{2} a_{12} &= 10 \\ a_{12} &= 20 \end{aligned} \quad \textcircled{d} \quad \checkmark$$

$$\begin{aligned} a + (10-1)d &= 10 \\ a + (12-1)d &= 20 \\ -(a+9d) &= 10 \\ a+11d &= 10 \\ d &= 2/5 \\ a &= 14/5 \end{aligned}$$

$$-12/5 + 2 \times 2/5 = 3V, 0$$

$$a_1 + a_2 + a_3 + a_4 + a_5 = \frac{1}{5} (a_1 + a_2 + a_3 + a_4 + a_5) \quad -4$$

$$\frac{da_r}{dr} = \frac{da_1}{dr} = 12a_r \leq da_1 \leq 12a_r \leq a_1$$

$$12a_r + 4d \leq a + 4d \leq 12a \leq d$$

$$\frac{a_r}{a_1} = \frac{a+d}{a} = \frac{12a}{a} \leq 12 \quad \textcircled{12} \quad \checkmark$$

$$E_n = E_{n-1} + 12 \Rightarrow \frac{E_n}{E_{n-1}} = \frac{E_{n-1} + 12}{E_{n-1}} = 1 + \frac{12}{E_{n-1}} \leq 10 \quad \textcircled{d \leq 10} \quad -V$$

$$\frac{(t_9 - t_0)^2}{t_v} \leq \frac{(t_9 - t_0)(t_9 + t_0)}{t_v} \leq \frac{(12d)(12t_v)}{t_v} \leq 10 \times 12 \leq 120$$

✓

Arman

$$2 + \sqrt{3}, \dots, 2(1 - 4\sqrt{3})$$

(A) d_2

$$d = \frac{b-a}{n+1} = \frac{2 + \sqrt{3} - 2 + 12\sqrt{3}}{12} = 12 \cdot \frac{\sqrt{3}}{12}$$

(9) ✓

(9)

$$2, \dots, 22$$

$$d = \frac{22-2}{n-2+1} = \frac{22-2}{n-1} = \frac{20}{n-1}$$

$$\frac{12}{2n-1}$$

$$11-2 = 9 \quad nd=9$$

$$21-11 = 10 \quad n\left(\frac{10}{2n-1}\right) = 9$$

(11)

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$$n=9$$

(10)

$$n + n+8 = n(2) + n(14)$$

$$2n+8 = 2+14$$

$$2n = 14 \quad n=7$$

$$n = 2 \cdot \frac{n}{2}$$

$$\frac{a_1}{a_f} = 2 \Rightarrow a+vd = 2a+9d \rightarrow -2d = 2a \Rightarrow a = -d$$

$$d(n-2) \leq 0 \rightarrow n-2 \leq 0 \quad (n \leq 2)$$

$$d = -2$$

(2) ✓

$$a_{n-1} = a_1 + (n-2)d = 22 \rightarrow (2n-1)d = 12$$

$$a_{n+1} = a_1 + nd = 11$$

$$\rightarrow nd = 9$$

و این دو را حل می‌کنیم

$$2nd - d = 12 \rightarrow d = 3$$

$$n=3$$