

$$a_1 = \varepsilon_0 \quad | \Rightarrow d = \frac{41 - \varepsilon_0}{\varepsilon - 1} = \frac{41}{\varepsilon} = \sqrt{v}$$

سوال ۱۱

$$a_n = vn + 33 \Rightarrow a_7 = 208$$

$$\Rightarrow vn + 33 = 208 \Rightarrow vn = 175 \Rightarrow n = \sqrt{175}$$

$$100 \leq vk + 3 \leq 999$$

سوال ۱۲

$$\Rightarrow 97 \leq vk \leq 994 \Rightarrow 13,1 \leq k \leq 12,2$$

$$\Rightarrow 13 \leq k \leq 12 \Rightarrow (12 - 13) + 1 = \boxed{129}$$

$$n=1 \Rightarrow n_1 + n_2 + n_3 = -9 + 11$$

سوال ۱۳

$$\Rightarrow 3a_1 + 9d = 4 \Rightarrow a_1 + 3d = 2 \checkmark$$

$$n=2 \Rightarrow n_1 + n_2 + n_3 = -12 + 12$$

$$\Rightarrow 3a_1 + 9d = 0 \Rightarrow a_1 + 3d = 0 \checkmark$$

$$\begin{cases} -a_1 - 3d = -2 \\ a_1 + 3d = 0 \end{cases}$$

$$d = -2 \Rightarrow a_1 = 4$$

$$a_{14} + a_1 = (a_1 + 13d) + (a_1 + 0d) = 2a_1 + 13d$$

$$\Rightarrow 2 \times 4 + 13 \times (-2) = \boxed{38}$$

$$\frac{r^{n+1} - r^{n+1}}{a_1, n} \Rightarrow a_n - a_{n-1} = a_{1n} - a_{1n-1}$$

سوال ۱۴

$$r^{n+1} - r^{n+1} = r^{n+1} - r^{n+1} \Rightarrow r^{n+1} - r^{n+1} = 0$$

$$\Rightarrow r^{n+1} = r^{n+1} - r^{n+1} \Rightarrow r^{n+1} - r^{n+1} = 0$$

$$r^n = y \Rightarrow y^2 - 3y - 2 = 0 \Rightarrow y = \frac{3 \pm \sqrt{33}}{2}$$

$$y_1 = 2 \Rightarrow r^n = 2 \Rightarrow n = 2$$

$$y_2 = -1 \times$$

$$a_n = r^n - 1 = 3 \quad a_1 = 2 = 1$$

$$a_{14} = r^{14} - 1 = 13$$

$$\Rightarrow 3 + 1 + 13 = \boxed{17}$$

$$\begin{cases} a_{14} - a_1 = 11 \\ a_{14} + a_1 = 14 \end{cases}$$

سوال ۱۵

$$rd = 11$$

$$2a_{14} = 14 \Rightarrow a_{14} = 7 \Rightarrow a_1 = 1$$

$$a_{14}, a_{13}, a_{12}, a_{11}, a_{10}, a_9, a_8, a_7, a_6, a_5, a_4, a_3, a_2, a_1$$

$$S_n = \frac{n}{2} (2a_1 + (n-1)d)$$

سوال ۱۶

$$S_{10} = \frac{10}{2} (2a_1 + (10-1)d)$$

$$+ S_{10} = S_{10} \Rightarrow 4 \times \left[\frac{10}{2} (2a_1 + 9d) \right] = 10 (2a_1 + 9d)$$

$$\Rightarrow 10 (2a_1 + 9d) = 10 (2a_1 + 9d)$$

$$\Rightarrow 2 (a_1 + 9d) = 2a_1 + 9d \Rightarrow 2a_1 + 18d - 2a_1 - 9d = 9d = 2a_1$$

$$\Rightarrow d = 2a_1$$

$$\frac{a_v}{a_1} = \frac{a_1 + d}{a_1} = \frac{a_1 + 2a_1}{a_1} = \frac{3a_1}{a_1} = \boxed{3}$$

$$t_n / t_n = t_{n-1} + 1$$

سوال ۱۷

$$\Rightarrow n - (n-1) = 1 \Rightarrow 1 = 1 \Rightarrow 1 = 1$$

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

$$t_a - t_b = (t_a - t_b)(t_a + t_b)$$

$$\Rightarrow (t_1 + \varepsilon_0 - t_1 - \varepsilon_0)(t_1 + \varepsilon_0 + t_1 + \varepsilon_0)$$

$$\Rightarrow 2 \times 0 \times (2t_1 + 2\varepsilon_0) = 0 \times t_1 + 1200$$

$$\Rightarrow t_v = t_1 + (v-1)d = t_1 + 4d = t_1 + 4$$

$$\frac{t_a - t_b}{t_v} = \frac{\varepsilon_0 t_1 + 1200}{t_1 + 4} = \frac{\varepsilon_0 (t_1 + 4)}{t_1 + 4} = \boxed{\varepsilon_0}$$

$$d = \frac{b-a}{n+1}$$

سوال ۱۸

$$d = \frac{r + \sqrt{r} - r + 12\sqrt{r}}{13} = \frac{12\sqrt{r}}{13} = \boxed{\sqrt{r}}$$

$$d = \frac{32 - 2}{\varepsilon n - 3 + 1} = \frac{30}{\varepsilon n - 2} = \frac{10}{\varepsilon n - 1}$$

سوال ۱۹

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

$$\Rightarrow a_n = a_1 + (n-1)d \Rightarrow 11 = 2 + (n-1)d \Rightarrow 9 = (n-1)d$$

$$\Rightarrow 11n - 9 = 12n \Rightarrow 3n = 9 \Rightarrow n = \boxed{3}$$

$$a_n + a_{n+2} = a_2 + a_{14}$$

سوال ۲۰

$$\Rightarrow n + n + 2 = 2 + 14 \Rightarrow n = \boxed{7}$$

$$a_n + a_{14} = a_2 + a_7, \quad a_1 = 3 \times a_2 \Leftrightarrow 3 \times \frac{a_n}{3} = a_n$$

$$\Rightarrow a_1 + 13d = 3a_1 + 6d \Rightarrow a_1 = -d$$

$$0 = a_1 + (k-1)d \Rightarrow -d + kd = 0 \Rightarrow k = \boxed{2}$$

$$\Rightarrow a_2 = 0$$