

۱۸

سوال اول (۲)

* جمله ۲۵ اُم برابر ۲.۸ است.

$$\begin{aligned} t_1 &= r_0 \\ t_2 &= r_1 \\ &\vdots \\ t_n &= r_{n-1} \end{aligned} \Rightarrow d = v$$

$$14v \Rightarrow \frac{14v}{v} = 14 \Rightarrow r_1 + r_2 \Rightarrow 28 \checkmark$$

سوال ۲ (۲)

$$100 \leq \sqrt{n+3} \leq 449 \Rightarrow 4V \leq \sqrt{n} \leq 44V \Rightarrow 16V \leq n \leq 1976V$$

$$n \Rightarrow \{14, 18, \dots, 14r\} \Rightarrow \frac{14r-14}{1} + 1 \Rightarrow 144 \Rightarrow 124 \text{ عدد و جود دارند که در هفتگی سه رقی اند} \checkmark$$

سوال ۳ (۲)

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

$$r a_{n+r} = -9n + 12 \Rightarrow r(a_{n+r} - 1) = -9n + 12 \Rightarrow (n+1)d + a = -9n + 12$$

$$dn + (a+d) = -9n + 12 \Rightarrow d = -9 \quad a = 9 \quad \{ a_{14} + a_n \Rightarrow ra + r^2d \Rightarrow 12 - 49 = -37 \} \checkmark$$

سوال ۴ (۲)

$$r^{n+2} = r^{2m} - r^3 + r^n - 1 \Rightarrow r^{n+2} = r^n + 1 + r^m - 1 \Rightarrow r^{n+2} = r^{2m} \Rightarrow r^n = m + 2 \Rightarrow n = 2$$

$$r^4 - r^3 + r^3 + r^2 - 1 \Rightarrow 13 + 1 + 3 = 17 \quad \boxed{t_3 + t_{13} = 2t_8}$$

سوال ۵ (۱)

$$\begin{aligned} t_{12} - t_{10} &= d \\ t_{10} + t_{12} &= 2d \end{aligned} \Rightarrow \begin{aligned} t_{12} &= 1d \\ t_{10} &= -1d \end{aligned} \Rightarrow \begin{aligned} t_{10} &= 1d \\ t_{12} &= -1d \end{aligned}$$

$$\begin{aligned} d &= 2, 5 \\ a_1 &= -12, 5 \\ a_{21} &= 37, 5 \end{aligned}$$

سوال هفتم (۱) رد از a_{12} لغ

سوال ۶ (۲)

$$r(a_1 + a_r + a_r + a_r + a_0) = a_0 + a_r + a_r + a_r + a_{11}$$

$$10a + 3d = 8a + 3d \Rightarrow 10a = 8d \Rightarrow ra = d(I)$$

$$\frac{a_r}{a_1} = \frac{a+d}{a} \Rightarrow \frac{ra}{a} = \frac{r}{1} \checkmark$$

$$t_n - t_{n-3} = 1d$$

$$\begin{aligned} t_{n-3} &+ t_{n-2} + t_{n-1} + t_n \\ &\quad +d \quad +d \quad +d \end{aligned}$$

$$3d = 1d \Rightarrow d = +d \quad I$$

سوال ۷ (۲)

$$\frac{(t_9 - t_8)(t_9 + t_8)}{t_9} = \frac{(rd)(rt_9)}{rt_9} = nd \xrightarrow{I} +4 \checkmark$$

سوال ۸ (۲)

$$d = \frac{b-a}{n+1} \Rightarrow \frac{r+\sqrt{r}-r+1\sqrt{r}}{13} = \frac{13\sqrt{r}}{13} = \sqrt{r} \checkmark$$

$$\frac{r_2 - r}{r_{n-2} + 1} = \frac{r_0}{r_{n-2}} = d \checkmark$$

$$\frac{15}{r_0 - 1} = d \Rightarrow a = \frac{1n - r - r_0}{r_{n-2}} = \frac{1n - r_0}{r_{n-2}}$$

$$\frac{1n - r_0}{r_{n-2}} = \frac{1n - r_0}{r_{n-2}} \Rightarrow \frac{1n - r_0}{r_{n-2}} = 11 \Rightarrow \frac{1n - r_0}{r_{n-2}} = 11 \Rightarrow \frac{1n - r_0}{r_{n-2}} = 11$$

$$\frac{13n - r_0}{r_{n-2}} = 11 \Rightarrow 13n - r_0 = 11r_{n-2} \Rightarrow 13n - r_0 = 11r_{n-2}$$

$$\textcircled{1} \rightarrow r n d - d = 1d \rightarrow 1n - d = 1d \rightarrow d = r$$

9 ~ 51

$$\textcircled{2} \rightarrow r n = 9 \rightarrow n = r$$

$$\overline{t_n + t_{n+r}} = \overline{t_r + t_{1r}}$$

$$r t_{n+r} = r t_1$$

$$t_{n+r} = t_1$$

$$\underbrace{n=1}$$

$$r t_r$$

$$t_n = r t_r$$

$$t_n = r t_r$$

$$\frac{(t_n - t_r)}{r} = d \Rightarrow \frac{r t_r - t_r}{r} = d \Rightarrow \frac{r d + a - r d}{r} = d \Rightarrow a = -d$$

$$\textcircled{2} \frac{1 \cdot d}{2}$$

$$(n-1)d + a = 0 \Rightarrow d n - d - d = 0 \Rightarrow d n - r d = 0 \Rightarrow d(n-r) = 0$$

$$d \neq 0 \Rightarrow n = r \checkmark$$