

$$a_1 = 15 \quad a_{25} = 91$$

$$d = \frac{a_n - a_1}{n-1} = \frac{91 - 15}{25-1} = \frac{76}{24} = \frac{19}{6} = v \quad (n-1)v = 191$$

$$a_n = a_1 + (n-1)d = 15 + (n-1)v = 15 + 19 = 34 \quad n-1 = 24$$

$$\boxed{n = 25}$$

$$100 \leq \sqrt{n} + 3 \leq 999 \Rightarrow 101 \leq \sqrt{n} + 3 \leq 996$$

$$98 \leq \sqrt{n} \leq 993 \quad 15 \leq n \leq 152 \rightarrow 1296$$

$$\frac{996 - 98}{\sqrt{n}} + 1 = 1296$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -9n + 12$$

$$a_{15} + a_{16} = -24 - 1 = -25$$

$$a_{15} + a_{16} + a_{17} = -9(9) + 12 \quad a_{16} = -1$$

$$a_{15} + a_{16} + a_{17} = -9(15) + 12 \quad a_{16} = -24$$

$$a_{15} = 15^x - 1$$

$$a_{16} = 16^x - 1$$

$$a_{17} = 17^x - 1$$

$$\frac{15^x - 1 + 16^x - 1}{2} = 16^{x+1}$$

$$15^x - 1 + 16^x - 1 = 16^{x+1}$$

$$y^2 + y - 4 = y \times 4$$

$$\boxed{15^x = y}$$

$$y^2 - 3y - 4 = 0$$

$$(y-4)(y+1) = 0$$

$$\boxed{y = 4}$$

$$y = -1 \text{ و } 4$$

$$15^x = 4$$

$$\boxed{x = 2}$$

$$a_{12} - a_{10} = 2$$

$$a_{11} = ? = a_{12} + 9d = 12 + 18 = 30$$

$$a_{12} + a_{10} = 22$$

$$2a_{11} = 20 \quad a_{11} = 10 \quad d = 2$$

$$a_1 + a_r + a_p + a_f + a_\omega = \frac{1}{r} (a_q + a_v + a_n + a_g + a_{10}) \quad \frac{a_r}{a_1} = ?$$

$$\cancel{a_r} = \frac{1}{r} (\cancel{a_n}) \quad a_r = \frac{1}{r} a_n \quad a + r d = \frac{1}{r} (a + v d)$$

$$a + r d = \frac{1}{r} a + \frac{r}{r} d \quad \frac{r}{r} a = \frac{1}{r} d \quad \boxed{r a_1 = d}$$

$$\frac{a_r}{a_1} = \frac{a_1 + d}{a_1} = \frac{a_1 + r a_1}{a_1} = \frac{r a_1}{a_1} = \underline{r}$$

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$$t_n = t_{n-r} + 1 \omega$$

$$t_q = t_q + 1 \omega$$

$$t_q - t_q = 1 \omega \quad d = \omega$$

$$t_q - t_\omega = r d = r_0$$

$$\frac{t_q^r - t_\omega^r}{t_v} = \frac{(t_q - t_\omega)(t_q^{r-1} + t_q^{r-2} t_\omega + \dots + t_\omega^{r-1})}{t_v} = \underline{r_0}$$

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$$r(1 - 4\sqrt{r}) \quad \text{---} \quad r + \sqrt{r}$$

$$d = \frac{r + \sqrt{r} - r + 1\sqrt{r}}{1r} = \sqrt{r}$$

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$$r \quad \text{---} \quad r_{n-r} \quad r r \quad \omega n = 4n - r \quad (n = r)$$

$$d = \frac{r r - r}{r_n - r + 1} = \frac{r_0}{r(r_n - 1)} = \frac{1 \omega}{r_n - 1}$$

$$a_{n+1} = a_1 + n d = r + \frac{n 1 \omega}{r_n - 1} = 11$$

$$\frac{\omega}{r_n - 1} = r$$

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

$$r n + r = r_0 \quad r n = 1 r \quad \boxed{n = 1}$$

$$\frac{a_n}{a_r} = r \quad \text{جمله دوم برابر میماند}$$

$$r a_1 = r d \quad \boxed{-a_1 = d}$$

$$\frac{a_n}{a_r} = r \quad \frac{a_1 + v d}{a_1 + r d} = r \quad a_1 + v d = r a_1 + r d$$

$$a_1 + (n-1)d = 0 \quad a_1 + (n-1) - a_1 = 0 \quad r a_1 - n a_1 = 0 \quad \boxed{n = r}$$

$$a_{12} = 0 \Rightarrow d = 0$$

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در دنباله 0 بیت، جمله ششم برابر جمله دوم نیست