

$$z_n = 5, 9, 13, 17$$

$\xrightarrow{+4} \xrightarrow{+4} \xrightarrow{+4}$

دنباله حسابی

$$z_n = a + (n-1)d \Rightarrow 5 + (n-1)4 = z_{n-1} + 4 = z_n + 4 \Rightarrow \boxed{z_n = z_{n-1} + 4} \rightarrow \text{الف}$$

$$z_{10} = 4(10) + 5 = \boxed{44} \rightarrow \text{ب}$$

$$4, 10, 16, 22$$

$\xrightarrow{+6} \xrightarrow{+6} \xrightarrow{+6}$

دنباله حسابی

$$z_n = a_1 + (n-1)d \Rightarrow 4 + (n-1)6 = z_n + 2$$

$$\text{الف) } z_1 = 4 \quad z_{10} = 42 \quad S_{10} = \frac{10}{2} \times (4 + 42) = \boxed{230}$$

$$\text{ب) } z_1 = 34 \quad z_{11} = 44 \quad S = \frac{4}{2} (34 + 44) = \boxed{140}$$

$$d = 2 - (1 + \sqrt{3}) = 1 - \sqrt{3}$$

$$a_{10} - a_{13} = (a_1 + 9d) - (a_1 + 12d) = 3d$$

$$3d = 2(1 - \sqrt{3}) \Rightarrow \boxed{d = \frac{2}{3}(1 - \sqrt{3})}$$

$$a_3 - a_2 = a_2 - a_1$$

$$5 - 3 \times 2^x = 3 \times 2^x - 2^x$$

$$5 - 3 \times 2^x = 2^x$$

$$5 = 4 \times 2^x$$

$$y = 2x + 1$$

$$b_3 - b_2 = b_2 - b_1$$

$$y - 2 = 2 - x$$

$$y + x = 4$$

$$\begin{cases} y = 2x + 1 \\ y + x = 4 \end{cases} \Rightarrow \begin{cases} 2x + 1 + x = 4 \\ 3x = 3 \\ x = 1 \\ y = 3 \end{cases}$$

$$\boxed{xy = 3}$$

$$\frac{2x + 4 + 4x}{2} = 2x - 1$$

$$z_1 = 2\left(\frac{1}{2}\right) - 4 = -3$$

$$z_2 = 0$$

$$z_3 = 3$$

$$-3, 0, 3, \boxed{6}$$

$\xrightarrow{+3} \xrightarrow{+3} \xrightarrow{+3}$

$$2x + 4 = 2x - 1$$

$$x = \frac{1}{2}$$

$$a_n = r, \omega, \nu, \dots, r_{n+1}$$

$$b_n = r, \omega, \nu, \dots, r_{n-1}$$

$$a_n = r,$$

بالعقود وصوره

$$a_1 + a_2 + a_3 = a_1 + a_1 + d + a_1 + r d = 3a_1 + 3d = 21$$

$$a_1 + d = \nu$$

$$a_1 + a_2 + a_3 = a_1 + a_1 + r d + a_1 + r d = 3a_1 + 4d = 10\omega$$

$$a_1 + r d = 3\omega$$

$$a_3 - a_2 + a_1 = r d - d + a_1 = a_1 + d = \nu$$

$$\begin{cases} a_1 + r d = 3\omega \\ a_1 + d = \nu \end{cases} \Rightarrow d = r\lambda$$

$$a_1 = -r1$$

$$\frac{a_3 - a_2 + a_1}{a_1} = -\frac{\nu}{r1} = -\frac{1}{r}$$

$$a_1 + a_2 + a_3 = a_1 + (a_1 + d) + (a_1 + r d) = 3a_1 + 3d = 21$$

$$a_1 + d = \nu$$

$$a_2 + a_3 = a_1 + r d + a_1 + r d = 2a_1 + 2r d = 10\omega$$

$$\begin{cases} 3a_1 + 3d = 21 \\ a_1 + d = \nu \end{cases} \Rightarrow \begin{cases} 3a_1 + 3d = 21 \\ -2a_1 - 2d = -14 \end{cases}$$

$$\Rightarrow \begin{cases} 3a_1 + 3d = 21 \\ -2a_1 - 2d = -14 \end{cases}$$

$$\omega d = 91$$

$$d = 11/2 \quad r a_1 = -22/3 \Rightarrow a_1 = -11/3$$

$$a_{10} = a + 9d = -11/3 + 9 \cdot 11/2 = 108 1/2$$

$$S_r = \frac{r}{r} (r a_1 + d) = r a_1 + d$$

$$S_q = \frac{q}{r} (r a_1 + d) = q (r a_1 + d)$$

$$\left[\frac{1}{r} (r a_1 + d) = r a_1 + d \right] \times r$$

$$r a_1 + d = r a_1 + r d \quad r a_1 = r d \quad a_1 = r d$$

$$S_{r0} = \frac{r}{r} (4d + 19d) = 20 \cdot d$$

$$S_v = \frac{v}{r} (4d + 4d) = 8r d$$

$$\frac{S_r}{S_v} = \frac{20 \cdot d}{8r d} = \frac{20}{8r}$$

$$a_1 = 11 \quad a_v = 30$$

$$a_v = 11 + (v-1)d$$

$$r \cdot r = 1 \cdot 4d$$

$$d = 4$$

$$r a_1 = 11 + (r-1)4 = 23$$

$$b_1 = 3\lambda \quad b_2 = 13 \quad \frac{13-3\lambda}{2+1} = \frac{-20}{2+1}$$

$$b_2 = 3\lambda + 2d_2 = 3\lambda - \frac{20}{2+1}$$

$$3\lambda - \frac{20}{2+1} = 23$$

$$2 = 4 \Rightarrow \text{بالعقود وصوره}$$