

$$(\frac{\text{عدد آخر} + \text{عدد اول}}{2}) = \frac{1^2 + 9^2}{2} = \frac{1+81}{2} = \frac{82}{2} = 41 \quad (2)$$

$$[1, 2, 3] \quad [4, 5, 6, 7, 8, 9, 10, 11, 12] \quad \dots \quad [121, 122, \dots, 343] \quad (2) \quad (5)$$

$$S_n = (a + L) \frac{n}{2} = (121 + 343) \frac{343 - 120}{2} = 51104 \quad (2)$$

$$\Rightarrow \frac{51104}{243} = 210 \quad (2)$$

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$$\left. \begin{array}{l} a_0, a_3, a_4, a_9 \rightarrow \text{ضابطه اول} \\ a_1, a_2, a_5, a_8 \rightarrow \text{ضابطه دوم} \\ a_6, a_7, a_{10}, a_{11} \rightarrow \text{ضابطه سوم} \end{array} \right\} \left[\frac{n}{k+2} \right] - 2 \xrightarrow{n=3k+2} \left[\frac{3k+2}{k+2} \right] - 2$$

$$= \left[2 + \frac{k-2}{k+2} \right] - 2 = \left[\frac{k-2}{k+2} \right] \rightarrow \text{برای } k=0 \text{ و } k=1 \text{ و } k=2 \text{ و } k=3 \text{ و } k=4 \text{ و } k=5 \text{ و } k=6 \text{ و } k=7 \text{ و } k=8 \text{ و } k=9 \text{ و } k=10 \text{ و } k=11$$

$$\Rightarrow S_{10} = 1 + 4 + (1+a) + 2 + (1+a) + 4 + 0 + (2+a) + 1 = 19$$

$$\Rightarrow a = -2 \quad (2)$$

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$$a_n = an^2 + bn + c$$

$$\left. \begin{array}{l} 25a + 5b + c = 14 \\ 49a + 7b + c = 16 \end{array} \right\} \xrightarrow{\text{مضرب}} 12a + b = 1/6 \Rightarrow a = -1/2, b = 4, c = -1 \quad (2)$$

$$\Rightarrow a = \frac{1}{V_0} \times (-1/2) = -0.12 \quad (2)$$

$$a_1 = -0.12 + 4 - 1 = 2.88$$

$$a_{10} = -0.12 \times (225) + (4 \times 10) - 1 = 14$$

$$\Rightarrow \frac{14}{2.88} = 4.86 \quad (2)$$

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$$\left. \begin{array}{l} a_4 = b_2 \\ a_8 = b_4 \end{array} \right\} \Rightarrow \begin{array}{l} a_1 + 3d = b_1 + d \\ a_1 + 7d = b_1 + 3d \end{array} \Rightarrow 4d = 2d' \Rightarrow d' = \frac{2}{3}d \quad (2)$$

$$b_{10} = 0 \Rightarrow b_1 + 9d' = 0 \Rightarrow b_1 + \frac{32}{3}d = 0 \Rightarrow b_1 = -\frac{32}{3}d \quad (2)$$

$$\frac{b_{10}}{d} = \frac{-\frac{32}{3}d + \frac{32}{3}d}{d} = \frac{0}{d} = 0 \quad (2)$$

$$f(a_1 + d) = \omega a_1(a_1 + r d) + r a_1(a_1 + d) \Rightarrow r a_1 + 1 r a_1 d + s d$$

$$= \omega a_1^r + 1 \omega a_1 d + r a_1^r + r a_1 d \rightarrow r a_1^r + a_1 d - s d^r = 0 \Rightarrow$$

$$\Rightarrow a = \frac{-d \pm \sqrt{d^r + r \omega d^r}}{r} = \frac{-d \pm \sqrt{d}}{r} \begin{cases} a = \frac{r d}{r} = \frac{a r}{d} = \frac{q d}{d} = \frac{q}{r} \\ -\frac{1 d}{r} = -r d \Rightarrow \frac{a r}{d} = \frac{d}{d} = 1 \end{cases}$$

$$a_n = a, b, c$$

$$b_n = b, \frac{a}{r}, \frac{c}{r} \xrightarrow{\times r} c, r a, r b \leq b, \frac{b-d}{r}, \frac{b+d}{r}$$

$$\Rightarrow \frac{1}{r}(b-d)^r = \frac{b}{r}(b+d) \Rightarrow d^r - r b d = 0 \Rightarrow d \begin{cases} \circ X \\ r b \end{cases}$$

$$a_n = -r b, b, r b \Rightarrow b_n = b, -b, b \Rightarrow q = -1, r q = -r$$

$$a, b, c \Rightarrow b = a q, c = a q^r$$

$$r b, r a, c \Rightarrow r a q, r a, a q^r \Rightarrow r a - r a q = a q^r - r a$$

$$\Rightarrow a q^r + r a q - r a = 0 \Rightarrow a(q^r + r q - r) = 0 \Rightarrow (q+r)(q-1) = 0$$

$$\Rightarrow q = \begin{cases} 1 X \\ -r \end{cases}$$

$$\frac{a q}{a q} = \frac{a q^r}{a q^0} = q^r \rightarrow (-r)^r = -r^r$$

$$\frac{a q^r}{a q^r} + \frac{a q}{a} = r \Rightarrow \frac{q^r}{a^r} + \frac{q}{a} - r = 0 \Rightarrow \frac{q}{a} = x$$

$$\Rightarrow x^r + x - r = 0 \Rightarrow (x+r)(x-1) = 0 \Rightarrow \frac{q}{a} = 1 \Rightarrow \frac{a q^r}{a q} = 1$$

$$\frac{q}{a} = -r \Rightarrow \frac{a}{q} = -\frac{1}{r}$$

$$a_r = a q^r$$

$$a_r = a q^r = (a q^r)^r \Rightarrow a q^r = q^r q^r \Rightarrow a q = 1 \quad \left. \begin{array}{l} a q^r = r V = q^r \\ a q = a q^1 = r V \end{array} \right\} \frac{a q^r}{a q} = \frac{r V}{1} = r V = q^r$$

$$\Rightarrow q^r = r V \Rightarrow q = r \Rightarrow a q = 1 \Rightarrow a = \frac{1}{r} \Rightarrow \frac{1}{r} - \frac{1}{r} = \frac{1}{4}$$