

$$\{1\}, \{2, 3, 4\}, \{5, 6, 7, 8, 9\} \dots$$

(۱)

$$\left. \begin{array}{l} 8^2 = 64 \\ 9^2 = 81 \end{array} \right\} \Rightarrow \text{دسته پنجم: } \{65, 66, 67, \dots, 79, 80, 81\}$$

$$\frac{81 + 65}{2} = 73 \checkmark$$

$$\{1, 2, 3\}, \{4, 5, 6, 7, 8, 9, 10, 11, 12\}, \{13, \dots, 39\}, \{40, \dots, 120\}, \{121, \dots, 363\} \quad (1) \quad (2) \quad (3) \quad (4) \quad (5)$$

$$\text{میانگین اعداد دسته پنجم: } \frac{121 + 363}{2} = 242 \checkmark$$

(۳)

جواب صفحه آخر...

$$\left. \begin{array}{l} a_m = an^r + bn + c \\ \frac{1}{v_0} x + f = -\frac{1}{\omega} \end{array} \right\} \Rightarrow \begin{array}{l} -\omega + \omega b + c = 1f \Rightarrow \omega b + c = 1f \\ -9, 18 + vb + c = 17, 1r \Rightarrow vb + c = 17, 1r \end{array} \Rightarrow \begin{array}{l} 2b = 18 \\ b = 9 \\ c = -1 \end{array}$$

(۲)

$$\frac{a_{10}}{a_1} = \frac{225 \times \frac{-1}{\omega} + 10 \times -1}{-\frac{1}{\omega} + 9 - 1} = \frac{-f\omega + 10 \times -1}{\frac{1f}{\omega}} = \frac{1f}{\frac{1f}{\omega}} = \omega \checkmark$$

$$\left. \begin{array}{l} a_f = b_r \\ a_n = b_v \end{array} \right\} \Rightarrow \frac{da}{db} = \frac{a_n - a_f}{a_v - a_r} = \frac{\delta}{f} \Rightarrow db = 0, 18 da$$

(۳)

$$b_{10} = b_1 + f db = 0 \Rightarrow b_1 + 9 \times 0, 18 da = 0 \Rightarrow b_1 = -1, 62 da$$

$$\frac{b_{10}}{da} = \frac{b_1 + 1f db}{da} = \frac{-1, 62 da + 11, 1r da}{da} = f \checkmark$$

$$7(a+d)^r = 5a(a+rd) + 3a(a+d)$$

$$\Rightarrow 7a^r + 1rad + 7d^r = 5a^r + 1oad + 3a^r + 3rad \Rightarrow 7a^r + d - 7d^r = 0$$

(۲)

$$\frac{a_f}{d} \left\{ \begin{array}{l} \frac{a+rd}{d} = \frac{-rd+rd}{d} = 1 \checkmark \\ \frac{a+rd}{d} = \frac{1\omega d+rd}{d} = f, \omega \checkmark \end{array} \right.$$

$$\frac{a+rd}{d} = \frac{1\omega d+rd}{d} = f, \omega \checkmark$$

$$\begin{array}{l} \downarrow \\ a^r + d - 1r d^r = 0 \Rightarrow \\ (a+fd)(a-rd) = 0 \end{array}$$

$$\Rightarrow a \left\{ \begin{array}{l} \frac{-fd}{r} = -rd \\ \frac{rd}{d} = 1, \omega d \end{array} \right.$$

A (4)

b)

بازسازی

-V

$$a, b, c \Rightarrow a + c = 2b \Rightarrow a = 2b - c$$

(2)

$$b, \frac{a}{r}, \frac{c}{r} \Rightarrow \frac{bc}{r^2} = \frac{a^2}{r^2} \Rightarrow a^2 - bc = 0 \Rightarrow (2b - c)^2 - bc = 0 \Rightarrow$$

$$4b^2 - 4bc + c^2 = 0$$

$$\Delta = (-4c)^2 - 4(4b^2) = 16c^2 - 16b^2$$

$$b = \frac{4c \pm \sqrt{16c^2 - 16b^2}}{2} = \frac{4c \pm 4\sqrt{c^2 - b^2}}{2} = 2c \pm 2\sqrt{c^2 - b^2}$$

$$a = 2b - c \begin{cases} 2 \times \frac{c}{r} - c = -\frac{c}{r} \\ 2c - c = c \end{cases}$$

$$rd = r \times \frac{a}{b} = \frac{-\frac{c}{r}}{\frac{c}{r}} \times r = -r \checkmark$$

$$a, b, c \Rightarrow ac = b^2 \Rightarrow b^2 - ac = 0 \Rightarrow b^2 - a(2a - 2b) = 0$$

(1, 5) - 1

$$2b, 2a, c \Rightarrow 2b + c = 2a \Rightarrow c = 2a - 2b \Rightarrow b^2 - 2a^2 + 4ab = 0 \Rightarrow$$

$$(b + 2a)(b - 2a) = 0 \Rightarrow b = \begin{cases} -2a \\ 2a \end{cases}$$

$$c = 2a - 2b \begin{cases} 2a - 2(-2a) = 6a \\ 2a - 2(2a) = -2a \end{cases}$$

$$\rightarrow q = -\frac{1}{2} - \frac{a_1}{a_2} = q^r = -\frac{3}{2}$$

$$\frac{aq^0}{(aq)^r} + \frac{aq}{a^r} = r \Rightarrow \frac{q^0}{a^r} + \frac{aq}{a^r} = r \Rightarrow \frac{q^r}{a^r} + \frac{q}{a} = r \Rightarrow q^r + qa = ra^r$$

(1, 5)

$$q^r + qa - ra^r = 0$$

$$(q + ra)(q - a) = 0$$

$$q = \begin{cases} -ra \\ +a \end{cases}$$

$$\frac{a^r}{a^r} = \frac{a^r}{aq} \begin{cases} \frac{a^r}{-ar} = -\frac{1}{r} \\ \frac{a^r}{ra} = \frac{1}{r} \end{cases}$$

$$q = \frac{c}{b} = \frac{-2a}{-2a} = 1 \Rightarrow \frac{a_1}{a_2} = q^r = 1$$

سوال 1

$$a_1 q^r = \sqrt{a_1 q^r} \Rightarrow a_1^r q^r = a_1 q^r \Rightarrow a_1 q = 1$$

(2) - 10

$$a_1 q^r = 2V \Rightarrow a_1 q \times q^r = 2V \Rightarrow 1 \times q^r = 2V \Rightarrow q = 2 \Rightarrow a_1 = \frac{1}{2} \checkmark$$

$$\frac{1}{2} - \frac{1}{2} = 0 \checkmark$$

ضابطه اول $\rightarrow a_0, a_3, a_4, a_9$

ضابطه دوم $\rightarrow a_1, a_4, a_7$

ضابطه سوم $\rightarrow a_2, a_5, a_8$

$$S_{10} = 1 + 4 + (1+a) + 2 + (1+a) + 4 + 0 + (2+a) + 8 = 19 \rightarrow a = -2$$

جمع جملات خواسته شده از ضابطه سوم بدست میاد :

$$a_n = \left[\frac{n}{K+2} \right] - 2 \xrightarrow{n=3K+2} \left[\frac{3K+2}{K+2} \right] - 2 = \overset{\text{میاد بیرون}}{\left[2 + \frac{K-2}{K+2} \right]} - 2 = \left[\frac{K-2}{K+2} \right]$$

این عبارت به ازای $K=0$ برابر ۱- و به ازای بقیه اعداد صحیح پس جواب خواسته شده ۲-.