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آریتیا کبری کلاس دهم ریاضیه

مصفوفه
 $\begin{matrix} 0 & 1 & 4 & 9 & 16 & 25 & \dots \\ \downarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \rightarrow & \\ C50 & 1 & 4 & 9 & 16 & 25 & \end{matrix}$
 $\rightarrow 25 = 5^2$

$$t_n = \frac{3}{4}n^2 + bn \rightarrow n=1 \rightarrow \frac{3}{4} + b = 1 \quad b = \frac{1}{4}$$

①

$$t_n = \frac{3}{4}n^2 - \frac{1}{4}n \quad t_{10} = \frac{3 \times 100}{4} - \frac{10}{4} = 74.75$$

25

شکل کلی: 0, 1, 3, 6, ...

$$t_n = \frac{n(n-1)}{2} \rightarrow \frac{n(n-1)}{2} = 11 \rightarrow n(n-1) = 22 \rightarrow n=11$$

⑤

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$$b_n: 0, 9, 18, \dots \rightarrow b_n = 9n$$

$$a_n: 0, 6, 12, \dots \rightarrow a_n = 6n$$

$$b_n \rightarrow b_{n+1}: 9(n+1) = 9n + 9$$

$$a_n \rightarrow a_{n+1}: 6(n+1) = 6n + 6$$

$$b_n + a_n = 9n + 6n = 15n$$

$$a_n = -1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \dots$$

$$a_{max} - a_{min} = \frac{1}{2} - (-1) = \frac{3}{2}$$

بالاترین و کمترین
مقدارها را پیدا کنید
و از آن‌ها تفاضل بگیرید

$$b_5 = 25, 21 = 4n \rightarrow a_n = 25 - 4n \rightarrow 4n = 25 \rightarrow n = 6.25$$

$$t_1 - t_0 = 11 \rightarrow 10a + b - 9a - b = 11 \rightarrow a = 11$$

$$t_4 - t_1 = 4a + b - a - b = 3a = 33 \rightarrow a = 11$$

$$a_n \leq a_{n+1} \rightarrow a_n = 1$$

$$4a + b \leq 1$$

$$4a \leq 1 \rightarrow a \leq 0.25, b \leq 1$$

$$a_1 = a + b = 1$$

$$a_2 = 2a + b = 11$$

$$\rightarrow b_n = 11, 14, \dots \rightarrow b_n = 3n - 1$$

$$b_n = \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \dots$$

$$b_n = \frac{1}{2^{n+1}}$$

$$11 - 1 \leq 4n + 9$$

$$2n \leq 1 \rightarrow n \leq 0.5$$

مقدارهای
کوچکتر از
1/2

$$b_n = 4, 9, 16, 25, \dots$$

$$b_n = \frac{1}{2}n^2 + bn$$

$$n=1 \rightarrow \frac{1}{2} + b = 4 \rightarrow b = \frac{7}{2}$$

$$b_n = \frac{1}{2}n^2 + \frac{7}{2}n \rightarrow 4A + 9B = \frac{1}{2} + \frac{7}{2} = 4$$

$$b_n = -4, -6, -8, \dots$$

$$b_n = n^2 + bn - 4 \rightarrow n=1 \rightarrow 1 + b - 4 = -4$$

$$b = -1$$

$$n^2 - n - 4 \leq 2n + 1$$

$$n^2 - 4n - 5 \leq 0 \rightarrow (n-5)(n+1) \leq 0$$

$$\rightarrow n \leq 5$$

مقدارهای
کوچکتر از
5

$$4a + b \leq 1$$

$$4a \leq 1 \rightarrow a \leq 0.25, b \leq 1$$

$$\rightarrow b_n = 2n + 1$$

$$n = 5$$