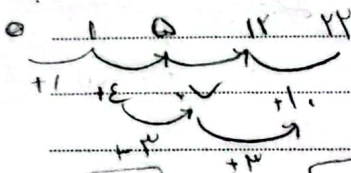


مثال ۵



$C=0$

$$a_n = an^2 + bn + c \rightarrow \frac{3}{2}n^2 + bn - \frac{3}{2}n^2 - \frac{1}{2}n$$

$$a_{10} = \frac{3}{2} \times 100 - 5 = 150 - 5 = 145$$

$$150 - 5 = 145$$

$$2a = 3$$

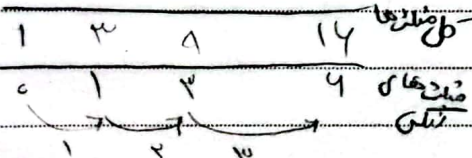
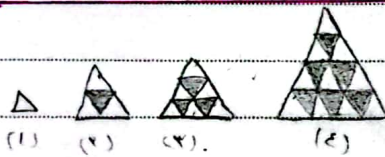
$$a = \frac{3}{2}$$

$$a_4 = \frac{3}{2}(4)^2 + 2b - 1 \times (4+2b=5) \quad (1)$$

$$a_5 = \frac{3}{2}(5)^2 + 3b \rightarrow \frac{37}{2} + 3b = 12$$

$$\frac{15}{2} + b = 7$$

$$b = -\frac{1}{2}$$

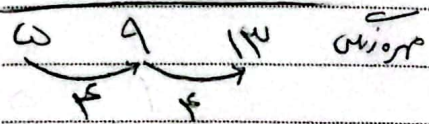
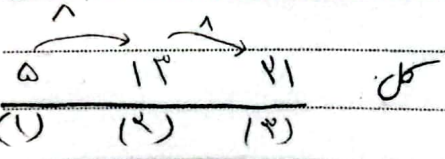


تعداد کل مثلث ها = n^2 (الگوی مربعی)

$$\frac{n(n-1)}{2} = \text{تعداد مثلث های زنجری} = \text{الگوی مثلثی}$$

$$\frac{n(n-1)}{2} = 55 \rightarrow n(n-1) = 110$$

$$n = 11$$



$$a_n = 11n - 3 \rightarrow a_{11} = 11 \times 11 - 3 = 121 - 3 = 118$$

$$a_n = 4n + 1 \rightarrow a_{11} = 44 + 1 = 45$$

$$a_n = \left(\frac{1}{n}\right)^n \rightarrow \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$$

اعداد صحیح بزرگترین شونده
بین کوچکترین عدد -

اعداد مثبت کوچکترین شونده بین بزرگترین عدد مثبت $\frac{1}{2}$ می باشد.

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

$$b_n = (-3)^n - 7n$$

$$b_4 = -27 - 28 = -55$$

$$a_n = -5n + 22$$

$$a_k = -5k + 22$$

$$b_7 = a_k \rightarrow -5k + 22 = -55 \rightarrow 77 = 5k \rightarrow k = 15.4$$

$$a_{10} - a_7 = 12$$

$$a_n = an + b \quad (4)$$

$$10a + b - 7a - b = 12 \Rightarrow 3a = 12 \Rightarrow a = 4$$

$$a_7 - a_1 \Rightarrow 7a + b - a - b \Rightarrow 6a = 6(4) = 24$$

$$a_7 = 24 \Rightarrow 7a + b = 24$$

$$a_1 = 4 \Rightarrow a + b = 4 \Rightarrow \begin{matrix} 7a + b = 24 \\ a + b = 4 \end{matrix} \Rightarrow \begin{matrix} -6a = -20 \\ a = \frac{10}{3} \end{matrix}$$

$$a_1 = (4 \times 1) - 1 = 3$$

$$a_2 = (4 \times 2) - 1 = 7$$

$$b_n = 3, 11, \dots$$

$$b_n = 10n - 7$$

$$t_n = 2, 4, 6, 8, 10, 12, \dots \Rightarrow \frac{2n-2}{2n+2} \quad \text{مخصوص؟}$$

$$\frac{2n-2}{2n+2} < \frac{1}{2} \Rightarrow 2n-2 < n+1 \Rightarrow n < 3 \Rightarrow n < \frac{12}{2}$$

$$3A + 5B$$

$$n \in \{1, 2, 3, 4, 5, 6\} \quad n < 4, 5$$

$$t_n = 4, 9, 9, 4, \dots$$

$$\begin{matrix} +2 & 0 & -2 & -4 \\ -2 & -2 & -2 \end{matrix} \Rightarrow -2 = 2a$$

$$a = -\frac{2}{2} = -1$$

$$an^2 + bn + cn \rightarrow$$

$$a = A \rightarrow A = -\frac{2}{2}$$

$$t_n = Ah^2 + Bn \quad (9)$$

$$t_2 = -\frac{2}{2} \times 4 + 2B = 9$$

$$t_4 = -\frac{2}{2} \times 16 + 4B = 4$$

$$3A + 5B \Rightarrow 3 \times \left(-\frac{2}{2}\right) + 5(1, 5) = -3 + 25 = 22$$

$$3A + 5B = 22$$

$$t_2 = -2 \times 4 + 2B = 9$$

$$-8 + 2B = 9$$

$$2B = 17 \Rightarrow B = 8.5$$

$$t_n = -4, -7, -10, \dots$$

$+0 + r + r + r$
 $+r + r$

$$r = -4 = c$$

$$r = r a$$

$$a = 1$$

$$a n^2 + b n + c \rightarrow t_n = n^2 - n - 4$$

$$t_r = r^2 \Rightarrow r^2 a + b r = r^2$$

$$t_1 = 1 \Rightarrow 1^2 a + b = 1$$

$$r a = 1$$

$$a = 1$$

$$b = r$$

$$a n + b$$

$$t_n = \Delta n + r$$

$$n^2 - n - 4 = \Delta n + r \rightarrow$$

$$n^2 - 4n = r$$

$$n(n-4) = r$$

$$n = 4$$

$$r = -4$$

(10)

$$t_r = n^2 + b n - 4 = -r$$

$$r + r b - 4 = -r$$

$$r b = -r$$

$$b = -1$$