

الف) $t_n = 3n^2 - 1$

۲۶ و ۷۴ و ۷ و ۴ و ۱۱ و ۲

ب) $t_n = \frac{2n+1}{n+4} =$

$\frac{3}{5}, \frac{5}{6}, \frac{7}{7}, \frac{9}{8}, \frac{11}{9}$

الف) $t_n = \frac{(-1)^n}{\sqrt{13+3}} = \frac{-1}{\sqrt{16}} = \frac{-1}{4} = -\frac{1}{4}$

ب) $t_n = 2(13) - \left[\frac{13}{4}\right] \Rightarrow 26 - 3 = 23$
 $\left[\frac{13}{4}\right] = 3/25 \approx 3$

الف) $t_n = 2n - 10 < 0 \rightarrow 2n < 10 \rightarrow n < 5 \rightarrow$ تا ۴

ب) $t_n = n^2 - 14n + 40 < 0 \rightarrow (n-14)(n-10) < 0 \rightarrow \frac{0}{14} \rightarrow \frac{0}{10} \rightarrow$

۱۰ و ۱۴

الف) $t_n = 2n - 16 < 0$

$\rightarrow \frac{0}{16} \rightarrow$

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ب) $n^2 - 12n + 27 = (n-3)(n-9) < 0$

$\rightarrow \frac{0}{3} \rightarrow \frac{0}{9} \rightarrow$

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$t_n = a_1 + (n-1)d \rightarrow ① + 4 = a_1 + (4-1)d = 7$

$a_1 + (3)(3) = 7$

② $+ 9 = a_1 + (9-1)d = 22$

$- a_1 + 3d = 7$

$- a_1 + 8d = 22$

$a_1 + 9 = 7 \rightarrow a_1 = -2$

$t_3 = a_1(3-1)d \rightarrow + 3 = -2(2)d = +4$

$d = 3$ (روش دوم) $22 - 7 = 15$ $\frac{15}{5} = 3$ $\leftarrow$ به عبارتی $\frac{15}{5} = 3$ $\leftarrow$ پس $d = 3$

الف) $t_n = n^2 - 6n + 2 \rightarrow a > 0$ $\rightarrow$ نمودار سهمی $\rightarrow$ $n = \frac{-b}{2a} = \frac{+6}{2} = 3$

$3^2 - 6(3) + 2 = -7$

ب) $t_n = n^2 + 4n + 1 \rightarrow a > 0$ $\rightarrow$ نمودار سهمی $\rightarrow$ $n = \frac{-b}{2a} = \frac{-4}{2} = -2$

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$d_1 = 6$

$a_2 = 13$

$a_3 = 22$

$\rightarrow$ الگو افزایشی است

$t_n = (1)^2 + 4(1) + 1 \rightarrow 6$

$\rightarrow$ کثره مقدار

$t_n = -4, -7, -10, -13, -16, -19, -22, -25, -28, -31, -34, -37, -40, -43, -46, -49, -52, -55, -58, -61, -64, -67, -70, -73, -76, -79, -82, -85, -88, -91, -94, -97, -100, \dots$

$-3, -1, 2, 3$

$\rightarrow 2a = 2 \rightarrow a = 1$

$\rightarrow an^2 + bn + c$

$d_1 = -4$ $\begin{cases} a_1 = 1 \times (1)^2 + b(1) + c = -4 \\ a_2 = -7 \end{cases}$

$\rightarrow$

$-(b+c) = -11 \rightarrow -b-c = +11$

$a_2 = -7$ $\begin{cases} a_2 = 1 \times (2)^2 + b(2) + c = -7 \end{cases}$

$\rightarrow$

$2b+c = -11$

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(۱۱ دامنه صفحه ۱۲)

$+b = -6$ و $c = +11$

$$f_0 = an^2 + bn + c$$

$$1 \times (10^2) + (-6)10 + 1 = 100 + -60 + 1 = 41$$

با ۷ سوال ۷ =

-۸

$$f_n = -69 - 161, 21, \dots$$

$$\begin{matrix} \xrightarrow{+9} & \xrightarrow{+9} & \xrightarrow{+9} \\ \xrightarrow{+9} & \xrightarrow{+9} & \xrightarrow{+9} \end{matrix}$$

$$\rightarrow 2a = 4 \rightarrow a = 2$$

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

$$a_1 = 2(1)^2 + b(1) + c = -6$$

$$\rightarrow b + c = -8 \rightarrow -b - c = +8$$

$$a_2 = 2(2)^2 + b(2) + c = -1$$

$$\rightarrow 2b + c = -9$$

$$f_n = 2n^2 + -1n + -7$$

$$\boxed{+b = -1}$$

$$\rightarrow \boxed{c = -7}$$

$$f_n = 2n^2 - 1n - 7$$

بازها هم معماره نامتناهی هستند مگر که: اشتراک تهی یا تک عضو باشد. پس

$$a + 1 \leq 2a + 1$$

$$a - 2a \leq -1 + 1$$

$$-a \leq -1 \rightarrow a \geq +1$$

$$a \in [1, +\infty) \leftarrow \text{مقدار } a$$

$$33 = \left[\frac{99}{3} \right] \leq \frac{99-3}{3} + 1 = 33 \quad (\text{الف})$$

$$19 = \left[\frac{99}{5} \right] \leq \frac{99-5}{5} + 1 = 19 \quad (\text{ب})$$

$$9 = \frac{99-15}{15} + 1 \leq \left[\frac{99}{15} \right] \leftarrow \text{اشتراک ۱۵} \quad (\text{ج})$$

$$19 + 33 = 52 \leftarrow \text{اجتماع الف و ب} \quad > 52 - 6 = 46$$