

$$\left. \begin{aligned} t_1 &= 3(1)^2 - 1 = 2 & t_4 &= 3(4)^2 - 1 = 47 \\ t_2 &= 3(2)^2 - 1 = 11 & t_5 &= 3(5)^2 - 1 = 74 \\ t_3 &= 3(3)^2 - 1 = 26 \end{aligned} \right\} \Rightarrow \{2, 11, 26, 47, 74\}$$

(۱) (۲) (۳) (۴) (۵)

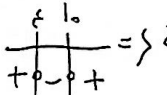
$$\left. \begin{aligned} t_1 &= \frac{2(1)+1}{1+4} = \frac{3}{5} & t_3 &= \frac{2(3)+1}{3+4} = \frac{7}{7} = 1 & t_5 &= \frac{2(5)+1}{5+4} = \frac{11}{9} \\ t_2 &= \frac{2(2)+1}{2+4} = \frac{5}{6} & t_4 &= \frac{2(4)+1}{4+4} = \frac{9}{8} \end{aligned} \right\} \Rightarrow \left\{ \frac{3}{5}, \frac{5}{6}, \frac{7}{7}, \frac{9}{8}, \frac{11}{9} \right\}$$

(۱) (۲) (۳) (۴) (۵)

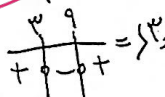
الف) $t_n = \frac{(-1)^n}{\sqrt{n+3}} \Rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{13+3}} = \frac{-1}{\sqrt{16}} = -\frac{1}{4}$

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

الف) $t_n = 2n - 10 \Rightarrow 2n - 10 < 0 \Rightarrow 2n < 10 \Rightarrow n < 5 \Rightarrow$ جمله منفی است

ب) $t_n = n^2 - 14n + 40 \Rightarrow t_n = (n-10)(n-4) \Rightarrow (n-10)(n-4) < 0 \Rightarrow$  $\Rightarrow$ ۵ و ۶ و ۷ و ۸ و ۹

الف) $t_n = 2n - 16 \Rightarrow 2n - 16 < 0 \Rightarrow 2n < 16 \Rightarrow n < 8 \Rightarrow$ جمله نامثبت است

ب) $t_n = n^2 - 12n + 27 \Rightarrow t_n = (n-3)(n-9) \Rightarrow (n-3)(n-9) < 0 \Rightarrow$  $\Rightarrow$ ۴ و ۵ و ۶ و ۷ و ۸

$\left. \begin{aligned} t_8 &= 7 \\ t_9 &= 22 \end{aligned} \right\} \Rightarrow a = \frac{22-7}{9-8} = 15 \Rightarrow 7 = 3(8) + b \Rightarrow b = -17 \Rightarrow t_n = 3n - 17 \Rightarrow t_9 = 3(9) - 17 = 9 - 17 = -8$

الف) $t_n = n^2 - 2n + 2 \Rightarrow \left| \frac{-(-2)}{2(1)} = 1 \Rightarrow -1 = \right.$ کثرین مقدار: -۱

ب) $t_n = n^2 + 4n + 1 \Rightarrow \left| \frac{-4}{2(1)} = -2 \Rightarrow -2 \notin \mathbb{N} \Rightarrow t_1 = 1^2 + 4(1) + 1 = 6 \right.$ کثرین مقدار: ۶

$\left. \begin{aligned} +1 & -4 & -7 & -10 & -13 \\ -5 & -3 & -1 & +1 & +3 \\ +2 & +2 & +2 & +2 & +2 \end{aligned} \right\} \Rightarrow a = \frac{2}{2} = 1, c = 1 \Rightarrow r = -1 \Rightarrow 1(1) + b(1) + 1 = -6 \Rightarrow b = -6 \Rightarrow t_n = n^2 - 2n + 1 \Rightarrow t_1 = 1^2 - 2(1) + 1 = 0$

$\left. \begin{aligned} -7 & -4 & -1 & 2 & 5 \\ +1 & +5 & +9 & +13 \\ +4 & +4 & +4 \end{aligned} \right\} \Rightarrow a = \frac{4}{4} = 1, c = -7 \Rightarrow -6 = 2(1) + b(1) - 7 \Rightarrow b = -1 \Rightarrow t_n = 2n^2 - n - 7$

$n \in (-\infty, a+4] \cap [2a+1, +\infty) \in \mathbb{W} \Rightarrow 2a+1 \geq a+4 \Rightarrow a \geq 3$



الف) $\frac{99-3}{3} + 1 = 33$

ب) $1 \langle \omega n \langle 100 = \rangle \frac{1}{\omega} \langle n \langle \frac{100}{\omega} = \rangle 1 \langle n \langle 19 = \rangle 19$

ج) $1 \langle \omega, 3, 4, \dots = \rangle \tau_n = 1 \langle \omega n = \rangle 1 \langle \omega n \langle 100 = \rangle n \langle \frac{100}{1\omega} = \rangle n \langle \frac{100}{3} = \rangle n = \{3, 4, 9, 12, 1\omega, 11\} = \rangle 6$

د) $\left. \begin{array}{l} 3 \text{ فقط بير: } 33 - 6 = 27 \\ \omega \text{ بير: } 19 - 6 = 13 \\ \omega, 3 \text{ بير: } 6 \end{array} \right\} = \rangle 27 + 13 + 6 = 46$