

۱) $t_n = 3n^2 - 1 \rightarrow t_1 = 3(1)^2 - 1 = 3 - 1 = 2$: جملہ اول
 $t_2 = 3(2)^2 - 1 = 12 - 1 = 11$: جملہ دوم
 $t_3 = 3(3)^2 - 1 = 27 - 1 = 26$: جملہ سوم
 $t_4 = 3(4)^2 - 1 = 48 - 1 = 47$: جملہ چہارم
 $t_5 = 3(5)^2 - 1 = 75 - 1 = 74$: جملہ پنجم

۲) $\frac{2n+1}{n+4} \rightarrow t_1 = \frac{2(1)+1}{1+4} = \frac{3}{5}$: جملہ اول
 $t_2 = \frac{2(2)+1}{2+4} = \frac{5}{6}$: جملہ دوم
 $t_3 = \frac{2(3)+1}{3+4} = \frac{7}{7} = 1$: جملہ سوم
 $t_4 = \frac{2(4)+1}{4+4} = \frac{9}{8}$: جملہ چہارم
 $t_5 = \frac{2(5)+1}{5+4} = \frac{11}{9}$: جملہ پنجم

۳) $t_n = \frac{(-1)^n}{\sqrt{13n+3}} \rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{13 \cdot 13 + 3}} = \frac{-1}{\sqrt{172}} = \frac{-1}{14}$

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

۵) $t_n = 2n - 10 \rightarrow n = 1 \rightarrow 2(1) - 10 = 2 - 10 = -8$
 $n = 2 \rightarrow 2(2) - 10 = 4 - 10 = -6$
 $n = 3 \rightarrow 2(3) - 10 = 6 - 10 = -4$
 $n = 4 \rightarrow 2(4) - 10 = 8 - 10 = -2$
 $t_n < 0$: جملہ منفی

۶) $t_n = n^2 - 12n + 35 \rightarrow n^2 - 12n + 35 < 0$
 $(n-4)(n-10) < 0 \rightarrow n_1 = 4 \rightarrow 4 < n < 10$
 $n_2 = 10$
 $n = \{5, 6, 7, 8, 9\} \Rightarrow$ جملہ منفی

۷) $t_n = 2n - 14 \rightarrow n = 1 \rightarrow 2(1) - 14 = 2 - 14 = -12$
 $n = 2 \rightarrow 2(2) - 14 = 4 - 14 = -10$
 $n = 3 \rightarrow 2(3) - 14 = 6 - 14 = -8$
 $n = 4 \rightarrow 2(4) - 14 = 8 - 14 = -6$
 $n = 5 \rightarrow 2(5) - 14 = 10 - 14 = -4$
 $n = 6 \rightarrow 2(6) - 14 = 12 - 14 = -2$
 $n = 7 \rightarrow 2(7) - 14 = 14 - 14 = 0$
 $n = 8 \rightarrow 2(8) - 14 = 16 - 14 = 2$
 $n = 9 \rightarrow 2(9) - 14 = 18 - 14 = 4$
 $n = 10 \rightarrow 2(10) - 14 = 20 - 14 = 6$
 $n = 11 \rightarrow 2(11) - 14 = 22 - 14 = 8$
 $n = 12 \rightarrow 2(12) - 14 = 24 - 14 = 10$
 $n = 13 \rightarrow 2(13) - 14 = 26 - 14 = 12$
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$$th = n^r - 12n + 2V \rightarrow n^r - 12n + 2V \leq 0$$

$$th \leq 0 \quad (n-r)(n-9) \leq 0 \xrightarrow{6 \div} \begin{matrix} n, r \\ n_r, 9 \end{matrix} \quad \begin{matrix} r \leq n \leq 9 \\ n = \{r, 9, 10, 11, 12, 13, 14, 15\} \\ \xrightarrow{-6 \div 6 \div 6} \end{matrix}$$

$$tr = V$$

$$t_9 = 22$$

$$\begin{matrix} -r, & 1, & r \\ \leftarrow -r & \leftarrow -r & \leftarrow -r \end{matrix} \quad \begin{matrix} V, & 10, & 12, & 14, & 16 \\ \leftarrow +r & \leftarrow +r & \leftarrow +r & \leftarrow +r & \leftarrow +r \end{matrix}$$

$$\boxed{tr = r}$$

$$d = \frac{22-V}{r+1} = \frac{10}{1} = r$$

$$th = n^r - 4n + r \rightarrow n = \frac{-b}{2a} \quad n = \frac{-4}{2(1)} = \frac{-4}{2} = -2$$

$$tr = (r)^r - 4(r) + r = 9 - 12 + r = \boxed{-3}$$

$$th = n^r + 5n + 1 \rightarrow n = \frac{-b}{2a} \quad n = \frac{-5}{2(1)} = -\frac{5}{2}$$

$$t_1 = (1)^r + 5(1) + 1 = 1 + 5 + 1 = \boxed{7}$$

$$n=1$$

$$th = -r, -V, -11, -V, -r, \dots$$

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

$$(rb+c) - (b+c) = -11 - (-a)$$

$$b = -11 + a = -9$$

$$\downarrow$$

$$c = 1$$

$$th = n^r - 4n + 1$$

$$t_{10} = 100 - 40 + 1 \rightarrow \boxed{t_{10} = 61}$$

$$t_1 = (1)^r + b(1) + c = -r$$

$$1 + b + c = -r$$

$$b + c = -a$$

$$\Leftrightarrow tr = (r)^r + b(r) + c = -V$$

$$r + rb + c = -V \rightarrow rb + c = -11$$

$$th = -9, -1, 1, 2, \dots$$

$$\begin{matrix} +0 & +9 & +12 \\ \leftarrow +r & \leftarrow +r & \leftarrow +r \end{matrix}$$

$$an = an^r + bn + c$$

$$a+b+c = -9 \rightarrow \boxed{c = -V}$$

$$ra+b = a \rightarrow \boxed{b = -1}$$

$$ra = r \rightarrow \boxed{a = r}$$

$$an = rn^r - n - V$$

$$[ra+1, +\infty) \cap (-\infty, d+r] = [ra+1, a+r]$$

$$ra+1 \leq d+r$$

$$ra-a+1 \leq r$$

$$a+1 \leq r$$

$$\frac{a \leq r-1}{a \leq r}$$

$$n = \{1, 2, 3, \dots, 100\}$$

$$(r+10) - 9 = \boxed{rV}$$

$$th = ra \rightarrow r, 4, 9, 16, \dots, 99 \rightarrow \frac{99-r}{r} + 1 = \boxed{33}$$

$$th = 2a \rightarrow 2, 10, 18, \dots, 100 \rightarrow \frac{100-2}{2} + 1 = \boxed{50}$$

$$th = 10a \rightarrow 10, 20, 30, \dots, 90 \rightarrow \frac{90-10}{10} + 1 = \boxed{9}$$