

الف) $t_n = 3n^2 - 1 \xrightarrow{\text{جدول اول}} \begin{matrix} 2 & 11 & 24 & 47 & 74 \\ 9 & 15 & 21 & 27 \end{matrix}$

ب) $\frac{r_{n+1}}{n+4} = \frac{3}{5} \frac{5}{6} \frac{7}{7} \frac{9}{8} \frac{11}{9}$

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

ب) $t_n = r_n - \left[\frac{n}{4} \right] \xrightarrow{\text{جدول اول}} \frac{14}{24} - \left[\frac{14}{4} \right] = \boxed{\frac{1}{3}}$

الف) $t_n = r_n - 10 \Rightarrow r_n - 10 < 0 \Rightarrow r_n < 10 \Rightarrow n < 5 \rightarrow 1, 2, 3, 4 \rightarrow \boxed{\text{جدول ۴}}$

ب) $t_n = n^2 - 14n + 40 \Rightarrow n^2 - 14n + 40 < 0 \Rightarrow (n-4)(n-10) < 0 \rightarrow 4 < n < 10 \rightarrow 5, 6, 7, 8, 9 \rightarrow \boxed{\text{جدول ۵}}$

الف) $t_n = r_n - 16 \Rightarrow r_n - 16 \leq 0 \Rightarrow r_n \leq 16 \Rightarrow n \leq 8 \rightarrow 1, 2, 3, 4, 5, 6, 7, 8 \rightarrow \boxed{\text{جدول ۸}}$

ب) $t_n = n^2 - 12n + 27 \Rightarrow n^2 - 12n + 27 \leq 0 \Rightarrow (n-3)(n-9) \leq 0 \rightarrow 3 \leq n \leq 9 \rightarrow 3, 4, 5, 6, 7, 8, 9 \rightarrow \boxed{\text{جدول ۷}}$

$\left. \begin{matrix} t_4 = 7 \\ t_9 = 22 \end{matrix} \right\} \rightarrow t_9 = t_4 + 5d \rightarrow 22 = 7 + 5d \rightarrow d = 3 \rightarrow t_3 = t_4 - d \rightarrow 7 - 3 = \boxed{4}$

$$الف) \{n = n^r - 9n + 1 \xrightarrow{a) \circ} n = \frac{-b}{r_a} \rightarrow \frac{9}{r} = r \rightarrow a_r = r^2 - 9r + 1 = \boxed{-V_{min}}$$

$$ب) \{n = n^r + \varepsilon n + 1 \xrightarrow{a) \circ} n = \frac{-b}{r_a} = \frac{-\varepsilon}{r} = -r \xrightarrow{\text{عدد طبيعي كسري}} 1 + \varepsilon | + 1 = \boxed{9_{min}}$$

$$\{n = -\frac{\varepsilon}{r} - \frac{V}{r} - \frac{1}{r} - \frac{V}{r} - \varepsilon \rightarrow \{n = an^r + bn + c$$

$$a_1 = -\varepsilon \rightarrow 1 \times 1^r + b + c = -\varepsilon \rightarrow 1 + b + c = -\varepsilon \rightarrow -b - c = \varepsilon$$

$$a_r = -V \rightarrow 1 \times r^r + r b + c = -V \rightarrow \varepsilon + r b + c = -V \rightarrow r b + c = -11 \rightarrow \left. \begin{array}{l} -b - c = \varepsilon \\ -b + c = -11 \end{array} \right\} \rightarrow b = -9, c = 1 \rightarrow$$

$$1100 = 1 \times 10^r + 9 \times 10 + 1 = 100 - 90 + 1 = \boxed{\varepsilon 1}$$

$$\{n = -9, -1, 1, r, \dots \rightarrow \{n = an^r + bn + c \rightarrow r a_1 = \varepsilon \rightarrow a = r$$

$$a_1 = -9 \rightarrow r \times (1^r) + b + c = -9 \rightarrow b + c = -1 \rightarrow -b - c = +1$$

$$a_r = -1 \rightarrow r \times (r^r) + r b + c = -1 \rightarrow r b + c = -9 \rightarrow r b + c = -9$$

$$b = -1, c = -V$$

$$\boxed{a_n = r n^r - n - V}$$

$$(-\infty, a + \varepsilon] \text{ و } [r a + 1, +\infty)$$

$$a + r = r a + 1 \rightarrow \varepsilon - 1 = 9 \rightarrow a = r$$

$$الف) \underbrace{100}_{r=100}, \underbrace{99}_{r=99}, \underbrace{10}_{r=10}, \dots, 99 \rightarrow \text{عدد طبيعي} = r n \rightarrow r n = 99 \rightarrow n = \boxed{r_{100}}$$

$$ب) \underbrace{100}_{r=100}, \underbrace{99}_{r=99}, \underbrace{10}_{r=10}, \dots, 100 \rightarrow \text{عدد طبيعي} = \omega n \rightarrow \omega n = 100 \rightarrow n = \boxed{r_{100}}$$

$$ج) 10, 99, 10, 99, \dots, 90 \rightarrow \text{عدد طبيعي} = 1 \omega n \rightarrow 1 \omega n = 90 \rightarrow n = \boxed{9}$$

$$د) r_{100} + r_{10} = \omega^3 - 9 = \boxed{\varepsilon V}$$