

$P, II, P4, KV, VF$

$$c) t_n = \frac{r_{n+1}}{n+k}$$

$$t_1 = \frac{p \times 1 + 1}{1 + p} = \frac{p}{q}$$

$$t_r = \frac{r \times r + 1}{r + r} = \frac{5}{2}$$

$$Z^{\mu} = \frac{r \times r + 1}{r + 1} = \frac{V}{V} = 1$$

$$t_k = \frac{p \times k + 1}{k + k} = \frac{9}{1}$$

$$L\omega = \frac{r \times \omega + 1}{\omega + r} = \frac{11}{9}$$

$$\frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}, \frac{6}{7}$$

(الف) $t_n = \frac{(-1)^n}{\sqrt{n+16}}$ $\rightarrow t_{13} = \frac{(-1)^{13}}{\sqrt{13+16}} = \frac{-1}{\sqrt{29}} = -\frac{1}{\sqrt{29}} \rightarrow \boxed{t_{13} = -\frac{1}{\sqrt{29}}}$ (2)

$$\text{c) } t_n = r_n - \left\lfloor \frac{n}{K} \right\rfloor \rightarrow t_{14} = r_{14} - \left\lfloor \frac{14}{K} \right\rfloor = r_4 - \left\lfloor \frac{14}{4} \right\rfloor = r_4 - 3 = r_4 - 3 = r_1 \rightarrow \boxed{t_{14} = r_1}$$

(الف) $t_n = p_n - 1 \rightarrow p_n - 1 < 0 \rightarrow p_n < 1 \rightarrow n < 5$ ك. ج. د. ١٣

ج) $t_n = n^r - 1 \leq n + k \rightarrow n^r - 1 \leq n + k < \dots \rightarrow (n-1) \cdot (n-k)$

$$(n-1)(n-k) < 0 \quad \begin{array}{c} k \quad 1 \\ + \quad - \quad + \end{array} \rightarrow k < n < 1 \rightarrow \boxed{1, 2, 3}$$

$$n \leq \lambda \rightarrow \boxed{\mu \leq \lambda}$$

$$b) t_n = n^r - 12n + 2v \rightarrow n^r - 12n + 2v \leq 0$$

$$n^2 - 12n + 27 \leq 0 \rightarrow (n-9)(n-3) \leq 0$$

$$(n-9) \cdot (n-13) \leq 0$$

$\downarrow$
9

$\downarrow$
13

$\rightarrow 13 \leq x \leq 9$
 $13, 14, 15, 16, 17, 18, 19$

Page 5

$$t_k = v, t_q = vv, t_r = ?$$

$$d = \frac{t_m - t_n}{m - n} = \frac{t_9 - t_8}{9 - 8} = \frac{11r - v}{\omega} = \frac{1\Delta}{\omega} = r \rightarrow d = r$$

$$t_r = t_1 + r^u d \rightarrow v = t_1 + r^u x^u \rightarrow v = t_1 + 9 \rightarrow t_1 = -9$$

$$t^w = t_1 + \gamma d = -\gamma + \gamma \times w = -\gamma + \gamma = 0 \rightarrow \boxed{t^w = 0}$$

الف) $t_n = n^2 - 4n + 2$

$$\text{مرد، اس سہی} = \frac{-b}{2a} = \frac{-(-4)}{2 \times 1} = \frac{4}{2} = 2$$

$$t_{\mu} = \mu^{\nu} - g \times \mu + \nu = 9 - 1\lambda + \nu = 11 - 1\lambda = \boxed{-V}$$

c) $t_n = n^r + \epsilon n + 1$

$$\min = \frac{-b}{r_a} = \frac{-r}{r_{x1}} = \frac{-r}{r} = -r \rightarrow x \quad (n \geq 1)$$

$$t_1 = 1^r + r \times 1 + 1 = 1 + r + 1 = 9$$

$$t_1 = 4$$

$$t_n = -4, -1, 1, 4, \dots$$

$\begin{array}{ccccccc} & \nearrow & \nearrow & \nearrow & \nearrow & \nearrow & \\ & +5 & +9 & +13 & & & \\ & \nwarrow & \nwarrow & \nwarrow & \nwarrow & \nwarrow & \\ & +4 & +4 & +4 & +4 & +4 & \end{array}$

۲

$$ra = r \Rightarrow a = \frac{r}{r} = 1 \Rightarrow a = 1$$

$$ra + b = -r \Rightarrow r \times 1 + b = -r \Rightarrow r + b = -r \Rightarrow b = -4$$

$$a + b + c = -r \Rightarrow 1 - 4 + c = -r \Rightarrow c = -r + 4 - 1 = 1 \Rightarrow c = 1$$

$$t_n = an^r + bn + c \Rightarrow t_n = n^r - 4n + 1$$

$$t_1 = 1 \cdot r - 4 \times 1 + 1 = 1 - 4 + 1 = -2 \Rightarrow t_1 = -2$$

$$t_n = -4, -1, 1, 4, \dots$$

$\begin{array}{ccccccc} & \nearrow & \nearrow & \nearrow & \nearrow & \nearrow & \\ & +5 & +9 & +13 & & & \\ & \nwarrow & \nwarrow & \nwarrow & \nwarrow & \nwarrow & \\ & +4 & +4 & +4 & +4 & +4 & \end{array}$

۲

$$ra = r \Rightarrow a = r$$

$$ra + b = 5 \Rightarrow r \times r + b = 5 \Rightarrow r + b = 5 \Rightarrow b = -1$$

$$a + b + c = -4 \Rightarrow r - 1 + c = -4 \Rightarrow 1 + c = -4 \Rightarrow c = -5$$

$$a_n = an^r + bn + c = rn^r - n - 5$$

$$a_n = rn^r - n - 5$$

۲

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

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

$$a = [r, +\infty)$$

۷

$$\{3, 6, 9, \dots, 99\} \rightarrow \frac{99-3}{3} + 1 = \frac{96}{3} + 1 = 32 + 1 = 33$$

$$32 + 1 = 33 \rightarrow \boxed{33}$$

۲

$$\{5, 10, 15, \dots, 95\} \rightarrow \frac{95-5}{5} + 1 = \frac{90}{5} + 1 = 18 + 1 = 19$$

$$\boxed{19}$$

$$\{15, 30, 45, \dots, 90\} \rightarrow \frac{90-15}{15} + 1 = \frac{75}{15} + 1 = 5 + 1 = 6$$

$$\frac{75}{15} + 1 = 5 + 1 = 6 \rightarrow \boxed{6}$$

$$n(A) \cup n(B) = n(A) + n(B) - n(A \cap B) =$$

$$32 + 19 - 4 = 32 + 13 = \boxed{45}$$

۹