

الف) $3(1)^2 - 1 = 2$, $3(2)^2 - 1 = 11$, $3(3)^2 - 1 = 24$, $3(4)^2 - 1 = 47$, $3(5)^2 - 1 = 74$

$$b) \frac{x}{2}, \frac{3}{4}, \frac{v}{v-1}, \frac{a}{k}, \frac{11}{9}$$

الف) $\frac{(-1)^{13}}{\sqrt{13+13}} = \frac{-1}{\sqrt{14}} = -\frac{1}{\sqrt{14}}$

$$b) r(13) - \left[\frac{13}{F} \right]_{[r, r_0]} = 24 - 3 = 21$$

الف) $r_{n-1} < 0$ $r_n < 1$ $n < \infty = 1 \leq n < \infty \Rightarrow$ 1-ك

۱ و ۴ = ریشه ها $\Rightarrow (n-4)(n-10) < 0 \Rightarrow$ تعیین علامت (ب)

$$\begin{array}{c} \times \qquad \qquad \times \\ \hline + \circ - \circ + \end{array}$$

$$r < n < 10$$

$$n = \omega, \gamma, \nu, \lambda, \rho \Rightarrow$$

الف) $r_n - 14 \leq 0 \Rightarrow r_n \leq 14 \Rightarrow n \leq 14 \Rightarrow 1 \leq n \leq 14 \Rightarrow \boxed{[1, 14]}$

$$b) (n-3)(n-9) \Rightarrow \text{يشهها} = 9, 3 \Rightarrow 3 \leq n \leq 9 \Rightarrow \boxed{6, 7}$$

$$t_{\mu} = V - \mu = \boxed{K}$$

$d \begin{cases} \rightarrow t_r \\ \rightarrow r_r = t_g \end{cases}$
 $\omega d = 10$
 $d = r$
 $v = t_r$

$$\text{الف) } a > 0 \Rightarrow n = \frac{-b}{2a} = \frac{4}{2} = 2$$

$$n = 2 \Rightarrow n^2 - 4n + 2 = 4 - 8 + 2 = \boxed{-2}$$

$$\text{ب) } n^2 + 4n + 1 = 0 \Rightarrow n = \frac{-b}{2a} = \frac{-4}{2} = -2$$

$$n = -2 \Rightarrow n^2 + 4n + 1 = 4 + (-8) + 1 = \boxed{-3}$$

$$z_n = -4, -7, -1, -7, -4$$

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

$$\begin{aligned} & \begin{array}{cccc} -4 & -7 & -1 & -7 & -4 \\ & \swarrow & \downarrow & \swarrow & \\ & -2 & -1 & +1 & +2 \\ & & +2 & +2 & +2 \\ & & 2a = 2 \Rightarrow a = 1 \end{array} \end{aligned}$$

$$\begin{cases} 2b + c = -11 \\ b + c = -5 \end{cases} \Rightarrow \begin{aligned} b &= -6 \\ c &= 1 \end{aligned}$$

$$f(n) = an^2 + bn + c = n^2 - 4n + 1 = (1.0)^2 - 4.0 + 1 = \boxed{1}$$

$$-4, -1, 1, 2, 1$$

$$f(n) = an^2 + bn + c$$

$$\begin{aligned} & \begin{array}{ccc} -4 & -1 & 1 \\ & \swarrow & \downarrow & \swarrow \\ & +2 & +9 & +12 \\ & & +4 & +4 \\ & & 2a = 2 \\ & & a = 1 \end{array} \end{aligned}$$

$$\begin{aligned} z_1 = -4 \\ z_2 = -1 \end{aligned} \Rightarrow \begin{cases} 1(1)^2 + b(1) + c = -4 \\ 1(2)^2 + b(2) + c = -1 \end{cases}$$

$$f(n) = 2n^2 - n - 7$$

$$\begin{cases} 2b + c = -9 \\ b + c = -1 \end{cases} \Rightarrow \begin{aligned} b &= -1 \\ c &= -7 \end{aligned}$$

$$A = [2a+1, +\infty)$$

$$A \cap B = [2a+1, a+4]$$

$$B = (-\infty, a+4]$$

|| برای متناهی بودن

$$2a+1 \geq a+4$$

$$\boxed{a \geq 3}$$

$$\text{الف) } 99 \leq 3$$

$$\frac{99-3}{3} + 1 = \boxed{33}$$

$$\Rightarrow 33 + 19 - 4 = \boxed{48}$$

$$\text{ب) } 9 \leq 5$$

$$\frac{9-5}{5} + 1 = \boxed{1.8}$$

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$$\text{ج) } 9.0 \leq 15$$

$$\frac{9.0-15}{15} + 1 = \boxed{0.6}$$