

$$\begin{aligned} & 2x^r + 3x^r - 1x + 3 \frac{x-1}{x^r + 1x - r} - 1 \\ & - 2x^r + 2x^r \end{aligned}$$

$$\Delta x^r - 1x + r$$

$$- \Delta x + \Delta n$$

$$- 2x + r$$

$$+ 2x - r$$

$$0$$

$$x + r$$

$$(n-1)(2x^r + 1x - r)$$

$$r \frac{(2n-1)(n+r)}{(2n-1)(n+r)}$$

$$D_F = 1R - \left\{1, -\frac{r}{r}, \frac{1}{r}\right\}$$

$$\text{جواب) } \frac{x+r}{2x^r + 1x + 1x + r} = \frac{x+r}{(n+1)(2x+1)(n+r)}$$

$$\begin{aligned} & 2x^r + 1x + 1x + r \frac{1}{n+1} \\ & - 2x^r - 2x^r \end{aligned}$$

$$2x^r + 1x + r$$

$$- 2x^r + 2x$$

$$2x + r$$

$$- 2x - r$$

$$0$$

$$D_F = 1R - \left\{-1, -\frac{1}{r}, -\frac{r}{r}\right\}$$

$$f(z) = \frac{z+z^2}{z^2 - (2n^2 + 2n - 1)z + (n-1)(n^2 - n + 1)} \Rightarrow \dots$$

شماره

$$R = \{1\} \quad \frac{z^2 - (2n^2 + 2n - 1)z + (n-1)(n^2 - n + 1)}{z^2 - (2n^2 + 2n - 1)z + (n-1)(n^2 - n + 1)} \cdot \frac{1}{z^2 - n + 1}$$

$$=) g = \sqrt{\frac{z+z^2}{z^2 - (2n^2 + 2n - 1)z + (n-1)(n^2 - n + 1)}} \cdot \frac{z^2 - (2n^2 + 2n - 1)z + (n-1)(n^2 - n + 1)}{z^2 - n + 1}$$

$$+ \dots + D_p = (-\dots) \cup (1, +\infty)$$

$$g = \frac{r}{n^r - a |n-1| - r n + a}$$

$$\begin{array}{l|l} n^r - a |n-1| - r n + a & n^r - a |n+1| - r n + a = 0 \\ n^r + r n = 0 & (n-r)(n-a) = 0 \\ n = 0 \quad n = -r & n = r \quad n = a \end{array}$$

$$\text{if } n=1 \rightarrow 1 - r + a = \epsilon \checkmark$$

$$D = \mathbb{R} - \{0, -r, r, a\}$$

$$\text{w) } |g| = \sqrt{[n] - r} \geq 0 \Rightarrow [n] \geq r \Rightarrow -n \geq r$$

$$n \leq -r$$

$$\begin{aligned} \Rightarrow |g| &= \frac{a n^r + r}{[n]^r - r[n] - r} \Rightarrow [n]^r - r[n] - r = 0 \\ [n] &= -1 \\ [n] &= -\frac{r}{a} = r \end{aligned}$$

$$D_f = (\mathbb{R} - \{[-1, 0) \cup [r, \epsilon)\})$$

$$\text{و 1) } y = \sqrt{\left[n - \frac{1}{p}\right] + \left[n + \frac{p}{p}\right]} \rightarrow -\infty$$

$$\sqrt{\left[n - \frac{1}{p}\right] + \left[n + \frac{p}{p}\right]} - 1 \Rightarrow \sqrt{\left[n + \frac{p}{p}\right] - 1} \Rightarrow$$

$$\sqrt{\left[n + \frac{p}{p}\right] - 1} \geq 0 \rightarrow \left[n + \frac{p}{p}\right] \geq \frac{1}{p} \Rightarrow$$

$$n + \frac{p}{p} \geq 1 \Rightarrow n \geq \frac{1}{p} \Rightarrow D_f = \left[\frac{1}{p}, +\infty\right)$$

$$\text{و 2) } y = \sqrt{\left[n - \frac{1}{p}\right] + \left[\frac{1}{p} - n\right]} \Rightarrow a \in \mathbb{Z} \quad [a] + [-a] = 0$$

$$a \notin \mathbb{Z} \quad [a] + [-a] = -1$$

$$n - \frac{1}{p} \in \mathbb{Z} \Rightarrow n \in \mathbb{Z} + \frac{1}{p} \Rightarrow$$

$$D_f = \left\{ n \mid n = k + \frac{1}{p}, k \in \mathbb{Z} \right\}$$

$$\text{و 3) } y = \frac{\cot x + 1}{\tan x + 1} \quad \begin{matrix} \sin \neq 0 \\ \cos \neq 0 \\ \tan \neq -1 \end{matrix}$$

$$D_f = \mathbb{R} - \left\{ k\pi, k\pi + \frac{\pi}{p}, k\pi - \frac{\pi}{p} \right\}$$

$$\Rightarrow y = \sqrt{1 - \epsilon \sin^2 x} \Rightarrow 1 - \epsilon \sin^2 x \geq 0$$

$$1 \geq \epsilon \sin^2 x \Rightarrow \sin^2 x \leq \frac{1}{\epsilon} \Rightarrow \frac{1}{\sqrt{\epsilon}} \leq \sin x \leq \frac{1}{\sqrt{\epsilon}}$$

$$D_f = \left[k\pi - \frac{\pi}{\sqrt{\epsilon}}, k\pi + \frac{\pi}{\sqrt{\epsilon}} \right]$$

$$\Rightarrow y = \sqrt{1 - \epsilon \cos^2 x} \Rightarrow -\sqrt{\epsilon}$$

$$1 - \epsilon \cos^2 x \geq 0 \Rightarrow \cos^2 x \leq \frac{1}{\epsilon}$$

$$D_f = \left[k\pi + \frac{\pi}{\sqrt{\epsilon}}, k\pi + \frac{3\pi}{\sqrt{\epsilon}} \right]$$

$$\Rightarrow y = \sqrt{\epsilon \sin^2 x - 1} \Rightarrow \epsilon \sin^2 x \geq 1$$

$$\sin^2 x \geq \frac{1}{\epsilon} \Rightarrow D_f = \left[k\pi + \frac{\pi}{\sqrt{\epsilon}}, k\pi + \frac{3\pi}{\sqrt{\epsilon}} \right]$$

$$\Rightarrow -1 \leq \sin x \leq 1 \Rightarrow -1 \leq x + \epsilon x + 1 \leq 1 \Rightarrow \Delta$$

$$x + \epsilon x + 1 \leq 1 \Rightarrow x + \epsilon x \leq 0 \Rightarrow x(n + \epsilon) \leq 0$$

$$\frac{-r \pm \sqrt{r^2 - 4}}{2} \Rightarrow [-r, 0]$$

$$n^r + r n + 1 \geq -1 \Rightarrow n^r + r n + 2 \geq 0$$

$$\frac{-r \pm \sqrt{r^2 - 4}}{2} \quad [-\infty, -r] \cup [-1, +\infty)$$

$$\Rightarrow D_f = [-r, -1] \cup [-1, +\infty)$$

$$\Rightarrow -1 \leq \sqrt{a - rn} \leq 1 \Rightarrow 0 \leq \sqrt{a - rn} \leq 1$$

$$0 \leq a - rn \leq 1 \Rightarrow -a \leq -rn \leq -\varepsilon \Rightarrow$$

$$\varepsilon \leq rn \leq a \Rightarrow \frac{\varepsilon}{r} \leq n \leq \frac{a}{r}$$

$$D_f = \left[\frac{\varepsilon}{r}, \frac{a}{r} \right]$$

$$\forall 1 - \log_e^n > 0 \Rightarrow \log_e^n < 1$$

$$n < e$$

$$n > 0$$

$$D_f = (0, e)$$

$$\therefore y = \log_r \left(1 - \log_{\frac{1}{r}}^n \right) \quad \log_{\frac{1}{r}}^n \rightarrow n > 0$$

$$\hookrightarrow 1 - \log_{\frac{1}{r}}^n \rightarrow 0$$

$$\log_{\frac{1}{r}}^n < 1 \quad \boxed{D_f = \left(\frac{1}{r}, +\infty \right)}$$

$$\forall n, n^r \geq r^n$$

$$\exists n - n^r \geq r \Rightarrow n^r - \{n^r\} \leq 0$$

$$n=1 \quad n=r$$

$$\frac{1}{x^2 - x}$$

$$[1, r] = D_r$$

$$\therefore y = \left(\frac{r^n + a}{r^n + \varepsilon} \right) \Rightarrow \frac{r^n + a}{r^n + \varepsilon} \in W$$

$$\frac{-(\varepsilon W - a)}{r^n - r} = n \Rightarrow a = \varepsilon W$$

$$D_f = \left\{ n \mid n = \frac{\varepsilon W - a}{r^n - r}, \quad \varepsilon W - a \right\}$$