

$$2) y = \frac{x+x}{x^2+x^2-1}$$

$$(n-1)(x^2+x^2-1) \rightarrow x^2-1 \neq 0 \rightarrow x \neq 1$$

$$x^2+x^2-1 \neq 0$$

$$(n+1)(x^2+x^2-1) \neq 0 \rightarrow x^2-1 \neq 0$$

دارد پس

(1)

$$D_f = \mathbb{R} - \{1, -2\}$$

$$3) y = \frac{x+x}{x^2+x^2+1}$$

$$(n+1)(x^2+x^2+1) \rightarrow x^2+1 \neq 0 \rightarrow x \neq -1$$

$$x^2+x^2+1 \neq 0$$

$$(n+1)(x^2+x^2+1) \neq 0 \rightarrow x^2+1 \neq 0$$

$$D_f = \mathbb{R} - \{-1, -\frac{1}{4}\}$$

$$4) y = \frac{x+x}{x^2-x^2+x-1}$$

$$(n-1)(x^2-x^2+x-1) \rightarrow x-1 \neq 0 \rightarrow x \neq 1 \quad D_f = \mathbb{R} - \{1\}$$

(2)

$$5) y = \sqrt{\frac{x+x}{x^2-x^2+x-1}}$$

$$\rightarrow \frac{x+x}{x^2-x^2+x-1} \geq 0$$

$$(n-1)(x^2-x^2+x-1) \rightarrow x-1$$

$$D_f = (-\infty, -1] \cup (1, +\infty)$$

$$\begin{array}{c|c} x & -x-1 \\ \hline y & +x-1 \end{array}$$

$$6) y = \frac{x}{x^2-1}$$

$$\rightarrow x^2-1 \neq 0 \rightarrow x \neq 1, -1$$

$$D_f = \mathbb{R} - \{1, -1, 0\}$$

$$\begin{cases} x^2-1 & x > 1 \\ (x-1)(x+1) & x < -1 \\ x=0 & x=0 \\ x^2-1 & x \leq -1 \\ x(x+1) & x \geq 1 \\ x=0 & x=0 \end{cases}$$

(3)

$$7) y = \sqrt{[x]-x}$$

$$\rightarrow [x]-x \geq 0$$

$$[x] \geq x \rightarrow -x \geq x \rightarrow x \leq 0$$

(4)

$$8) y = \frac{[x]+x}{[x]-x}$$

$$([x]+1)([x]-x) \rightarrow [x] \neq -1 \rightarrow [x] \neq -1 \rightarrow -1 \leq x < 0$$

$$[x] \neq x \rightarrow x \leq x < x$$

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

$$\text{اذا) } y = \sqrt{\left[n - \frac{1}{x}\right] + \left[n + \frac{1}{x}\right]}$$

$$\therefore y = \sqrt{\left[n - \frac{1}{x}\right] + \left[\frac{1}{x} - n\right]}$$

$$\text{اذا) } y = \frac{\cos(x+1)}{\tan(x+1)} \rightarrow \tan(x+1) \neq 0$$

$$\tan(x+1) \neq -1 \rightarrow D_f = \mathbb{R} - \left\{xk + \frac{3\pi}{4}, xk + \frac{5\pi}{4}\right\}$$

$$\therefore y = \sqrt{1 - \epsilon \sin^2 x} \rightarrow 1 - \epsilon \sin^2 x \geq 0 \rightarrow -\frac{1}{\epsilon} \leq \sin^2 x \leq \frac{1}{\epsilon}$$

$$D_f = \left[xk + \frac{\pi}{2}, xk + \frac{3\pi}{2}\right]$$

$$\text{اذا) } y = \sqrt{\epsilon \sin^2 x - 1} \rightarrow \epsilon \sin^2 x - 1 \geq 0 \rightarrow \frac{\pi}{2} \leq x \leq \frac{3\pi}{2}$$

$$D_f = \left[xk + \frac{\pi}{2}, xk + \frac{3\pi}{2}\right]$$

$$\therefore y = \sqrt{1 - \epsilon \cos^2 x} \rightarrow 1 - \epsilon \cos^2 x \geq 0 \rightarrow \cos^2 x \leq \frac{1}{\epsilon}$$

$$D_f = \left[xk + \frac{\pi}{2}, xk + \frac{3\pi}{2}\right] \quad \frac{\pi}{2} \leq x \leq \frac{3\pi}{2}$$

$$\text{اذا) } y = \arcsin(n^x + n + 1) \rightarrow -1 \leq n^x + n + 1 \leq 1$$

$$n^x + n + 1 \leq 1 \rightarrow n^x + n \leq 0 \rightarrow n(n+x) \leq 0$$

$$n^x + n + 1 \geq -1 \rightarrow n^x + n + 2 \geq 0 \rightarrow (n+x)(n+1) \geq 0$$

$$D_f = [-n, -1] \cup [-1, 0]$$

x	-∞	0
y	+	-

Ⓘ

x	-∞	-1
y	+	+

Ⓡ

$$\therefore \cos y = \sqrt{\omega - \epsilon x} \quad D_f = \left[x, \frac{\omega}{\epsilon}\right]$$

$$\omega - \epsilon x \geq 0 \rightarrow x \leq \frac{\omega}{\epsilon}$$

$$\sqrt{\omega - \epsilon x} \rightarrow \sqrt{\omega - \epsilon x} \leq 1 \rightarrow \omega - \epsilon x \leq 1 \rightarrow \frac{\omega}{\epsilon} - x \leq 0$$

$$\text{اذا) } y = \log_v (1 - \log_{\frac{1}{v}} \frac{n}{v}) \rightarrow 1 - \log_{\frac{1}{v}} \frac{n}{v} > 0 \rightarrow \log_{\frac{1}{v}} \frac{n}{v} < 1 \quad (7)$$

$$\underline{n < v}$$

$$\text{ب) } y = \log_v (2 - \log_{\frac{1}{v}} \frac{n}{v}) \rightarrow 2 - \log_{\frac{1}{v}} \frac{n}{v} > 0 \rightarrow \log_{\frac{1}{v}} \frac{n}{v} < 2 \quad \underline{n < \frac{v^2}{2}}$$

$$\text{ج) } y = \sqrt{v^2 n - n^2} - 1 \rightarrow v^2 n - n^2 - 1 > 0 \rightarrow v^2 n - n^2 > 1 \quad (10)$$

$$\frac{n}{y} \mid -\frac{1}{v} + \frac{1}{v} - \quad \begin{matrix} (n - n^2 - 1) > 0 \\ -(n - v)(n - 1) \end{matrix} \quad \leftarrow (n - n^2) > 1$$

$$D_f = [1, v]$$

$$\text{د) } y = \left(\frac{v^2 n + 1}{v^2 n + 1} \right) ! \quad \begin{matrix} v^2 n + 1 = 0 \rightarrow \underline{n = -v} \\ D_f = \mathbb{R} - \{-v\} \end{matrix}$$