

$$\underbrace{\left[x - \frac{1}{p}\right]}_a + \left[-\left(x - \frac{1}{p}\right)\right]$$

$$\begin{cases} a \in \mathbb{Z} \rightarrow 0 \\ a \notin \mathbb{Z} \rightarrow -1 \end{cases}$$

$$x - \frac{1}{p} \in \mathbb{Z}$$

$$x \in \mathbb{Z} + \frac{1}{p}$$

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

$$\textcircled{4} \text{ الف) } \left[x - \frac{1}{p}\right] + \left[x + \frac{p}{p}\right] \geq 0$$

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

$$2\left[x + \frac{p}{p}\right] \geq 1 \rightarrow \left[x + \frac{p}{p}\right] \geq \frac{1}{2}$$

$$x + \frac{p}{p} \geq 1 \rightarrow x \geq \frac{1}{p}$$

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

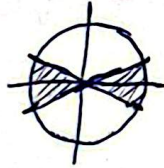
$$y = \sqrt{1 - p \sin^2 x} \geq 0$$

$$1 \geq p \sin^2 x$$

$$\sin^2 x \leq \frac{1}{p}$$

$$|\sin x| \leq \frac{1}{\sqrt{p}}$$

$$D_f = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$$



$k \in \mathbb{Z}$

$$y = \frac{\cot x + 1}{\tan x + 1} \neq 0$$

$\textcircled{5} \text{ الف) } k \in \mathbb{Z}$

$k \in \mathbb{Z}$

$$\sin x \neq 0$$

$$x \neq k\pi$$

$$\cos x \neq 0$$

$$x \neq k\pi + \frac{\pi}{2}$$

$$\tan x \neq -1 \quad x \neq k\pi - \frac{\pi}{4}$$

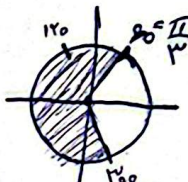
$$D_f = \mathbb{R} - \left\{ k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{4} \right\}$$

$$y = \sqrt{1 - p \cos x} \geq 0$$

$$p \cos x \leq 1$$

$$\cos x \leq \frac{1}{p}$$

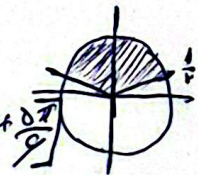
$$D_f = \left[2k\pi + \frac{\pi}{p}, 2k\pi + \frac{\Delta\pi}{p} \right]$$



$$y = \sqrt{p \sin x - 1} \geq 0$$

$$\sin x \geq \frac{1}{p}$$

$$D_f = \left[2k\pi + \frac{\pi}{p}, 2k\pi + \frac{\Delta\pi}{p} \right]$$



$\textcircled{6} \text{ الف) } k \in \mathbb{Z}$

$k \in \mathbb{Z}$

$$\cos y = \sqrt{1 - p x} \geq 0$$

$$-1 \leq \sqrt{1 - p x} \leq 1$$

$$1 - p x \leq 1$$

$$p \leq p x$$

$$\textcircled{1} [p, +\infty) \leftarrow x \geq \frac{p}{p}$$

$$p x \leq 1$$

$$\textcircled{2} x \leq \frac{1}{p}$$

$$\textcircled{1} \cap \textcircled{2} \quad D_f = \left[\frac{1}{p}, \frac{p}{p} \right]$$

$$-1 \leq x^2 + p x + 1 \leq 1$$

$\textcircled{7} \text{ الف) } x \geq -1 \vee x \leq -p$

$$x^2 + p x + 1 \geq -1$$

$$x^2 + p x + 2 \geq 0$$

$$(x+1)(x+p) \geq 0 \quad \frac{-p-1}{+p-1}$$

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

$$x^2 + p x + 1 \leq 1$$

$$x^2 + p x \leq 0$$

$$x(x+p) \leq 0$$

$$\frac{-p-1}{+p-1} \leq x \leq 0$$

آنترسیا ہفما صالحو

$$1 - \log_{\mu}^x > 0 \quad x > 0$$

(9) الف

$$\log_{\mu}^x < 1 \rightarrow x < \mu$$

$$D_f = (0, \mu)$$

(ب)

$$1 - \log_{\frac{1}{\mu}}^x > 0 \quad x > 0 \textcircled{1}$$

$$\textcircled{1} \textcircled{2} \rightarrow D_f = \left(\frac{1}{\mu}, +\infty\right)$$

$$\log_{\frac{1}{\mu}}^x < 1 \rightarrow x > \frac{1}{\mu} \textcircled{2}$$

$$\frac{0}{0}$$

$$\mu^{\mu x - x^{\mu}} - 1 \geq 0 \quad \log_{\mu}^{\mu x - x^{\mu}} \geq \log_{\mu}^1 \text{ (الف) } \textcircled{10}$$

$$\mu^{\mu x - x^{\mu}} \geq 1$$

$$\log_{\mu}^{\mu x - x^{\mu}} \geq \mu$$

$$-(x^{\mu} - \mu x + \mu) \geq 0$$

$$\frac{1}{\mu} + \frac{\mu}{\mu} = \frac{1}{\mu} + 1 = \frac{1 + \mu}{\mu}$$

$$-(x-1)(x-\mu) \geq 0$$

$$[1, \mu]$$

$$\frac{\mu x + d}{\mu x + \mu} \in W \xrightarrow[\text{بیلزنی}]{\text{نویزنی}} \frac{\mu W - d}{-\mu W + \mu} \text{ (ب)}$$

$$D_f = \left\{ x \mid x \in \frac{\mu k - d}{-\mu k + \mu}, k \in W \right\}$$

تكليف (٣)

آثر بسا آقا صالح

$$\frac{x+3}{(2x^2+1)(x+1)} - \frac{1}{x}$$

$$x^2+1 \neq 0 \Rightarrow (x+1)(x+3)$$

$$x = \frac{1}{x}$$

$$x = \frac{3}{x} \Rightarrow x = 3$$

$$D_f = \mathbb{R} - \left\{ -1, -\frac{1}{x}, 3 \right\}$$

(الف) (١) $\frac{x+3}{(x-1)(x^2+\delta x-3)} \rightarrow \frac{1}{x-1}, -3$

$$\Delta = b^2 - 4ac = \delta^2 - 4(1)(-3) > 0$$

$$x^2 + \delta x - 3 = (x+3)(x-1) \rightarrow x = \frac{1}{x} \rightarrow x = -\frac{3}{x} = -3$$

$$D_f = \mathbb{R} - \left\{ -3, \frac{1}{x}, 1 \right\}$$

(ب) $\sqrt{\frac{x+3}{(x^2-x+1)(x-1)}} \geq 0$

$$D_f = (-\infty, -3] \cup (1, +\infty)$$

(الف) (٥) $\frac{x+3}{(x^2-x+1)(x-1)}$

$$\Delta = 1 - 4(1) = -3 < 0 \quad D_f = \mathbb{R} - \{1\}$$

$$\frac{y}{x^2 - \delta |x-1| - 2x + \delta} \neq 0$$

(٣) $x^2 - \delta x - 2x + \delta + \delta = (x-2)(x-\delta)$

(٤) $x^2 - \delta + \delta x - 2x + \delta = x(x+3)$

$$D_f \neq \emptyset = \mathbb{R} - \{-3, 0\}$$

$$\frac{\delta x^2 + 6}{[x]^2 - 2[x] - 3} \neq 0$$

$$t = [x]$$

$$t^2 - 2t - 3 = 0$$

$$a+b=c \rightarrow t = -1 \rightarrow t = -\frac{c}{a} = 3$$

$$D_f = \mathbb{R} - [-1, 3] \cup [3, +\infty)$$

(ب) $y = \sqrt{-x} - 2 \geq 0$

(الف) (٥)

$$[-x] \geq +2 \quad D_f = (-\infty, -2]$$

$$x \leq -2$$