



$$\left\{ \begin{array}{l} \frac{x^2}{x^2 - \sqrt{x} + 1} \quad x \geq 1 \rightarrow D_I = \mathbb{R} - \{1, 0\} \quad I \end{array} \right. \quad (3)$$

$$\frac{x^2}{x^2 + \sqrt{x}} \quad x \leq 1 \rightarrow D_{II} = \mathbb{R} - \{0, -1\} \quad II \quad \Rightarrow I \cup II$$

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

پس آن چیزی از ۲ بزرگتر مساوی است!

چون آن ۲ بزرگتر مساوی است

$$[-x] - 2 > 0 \rightarrow [-x] \geq 2 \rightarrow \infty \quad D_f = (\infty, 1) \quad (الف)$$

$$-x \geq 2 \rightarrow x \leq -2$$

$$\frac{\Delta x^2 + 4}{([x] - 2)([x] + 1)} \quad (+) \text{ مثبت}$$

$$\begin{cases} [x] - 2 \neq 0 \rightarrow [x] \neq 2 \rightarrow [x] \neq [2, 3) \quad I \\ [x] + 1 \neq 0 \rightarrow [x] \neq -1 \rightarrow [x] \neq [-1, 0) \quad II \end{cases}$$

$$D_f = \mathbb{R} - I \cup II = \mathbb{R} - [2, 3) \cup [-1, 0)$$

$$\left[x - \frac{1}{x} \right] + \left[x + \frac{1}{x} \right] \geq 0 \rightarrow \left[x + \frac{1}{x} - 1 \right] + \left[x + \frac{1}{x} \right] \geq 0 \rightarrow 2 \left[x + \frac{1}{x} \right] - 1 \geq 0 \quad (الف)$$

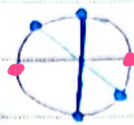
$$\left[x + \frac{1}{x} \right] \geq \frac{1}{2} \rightarrow x + \frac{1}{x} \geq 1 \rightarrow x \geq \frac{1}{x} \rightarrow D_f = \left[\frac{1}{2}, +\infty \right)$$

$$\left[x - \frac{1}{x} \right] + \left[-\left(x - \frac{1}{x} \right) \right] \geq 0 \rightarrow \begin{cases} a \in \mathbb{Z} \rightarrow [a] + [-a] = 0 \quad \checkmark \\ a \notin \mathbb{Z} \rightarrow [a] + [-a] = -1 \quad \alpha \end{cases}$$

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

$$D_f = \{x \mid x = k + \frac{1}{x}, k \in \mathbb{Z}\} \quad x - \frac{1}{x} \in \mathbb{Z}$$

$$\left\{ \begin{array}{l} \tan n + 1 \neq 0 \rightarrow \tan n \neq -1 \\ \sin n \neq 0 \rightarrow n \neq k\pi \\ \cos n \neq 0 \end{array} \right.$$



$$\frac{\cos n + 1}{\frac{\sin n}{\cos n} + 1}$$

$$P = R - \left\{ k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right\}, k \in \mathbb{Z}$$

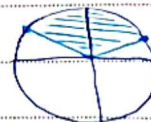
$$1 - r \sin^2 \geq 0 \rightarrow r \sin^2 \leq 1 \rightarrow \sin^2 \leq \frac{1}{r} \rightarrow -\frac{1}{\sqrt{r}} \leq \sin \leq \frac{1}{\sqrt{r}}$$



$$P = \left[k\pi - \frac{\pi}{5}, k\pi + \frac{\pi}{5} \right]$$

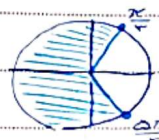
$$r \sin - 1 \geq 0 \rightarrow r \sin \geq 1 \rightarrow \sin \geq \frac{1}{r}$$

$$P = \left[2k\pi + \frac{\pi}{5}, 2k\pi + \frac{9\pi}{5} \right]$$



$$1 - r \cos \geq 0 \rightarrow r \cos \leq 1 \rightarrow \cos \leq \frac{1}{r}$$

$$P = \left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{7\pi}{4} \right]$$



$$\left\{ \begin{array}{l} x^2 + 3x \leq 0 \\ x^2 + 3x + 2 \geq 0 \\ (x+1)(x+2) \geq 0 \end{array} \right.$$

$$\left\{ \begin{array}{l} 5 - 2x \geq 0 \rightarrow 2x \leq 5 \rightarrow x \leq \frac{5}{2} \\ -1 \leq \sqrt{5 - 2x} \leq 1 \rightarrow 5 - 2x \leq 1 \rightarrow 2x \geq 4 \rightarrow x \geq 2 \end{array} \right.$$

$$I \cap II = P = [2, \frac{5}{2}]$$

Arman

$$\left\{ \begin{array}{l} 1 - \log_r x > 0 \rightarrow \log_r x < 1 \rightarrow x < r \quad I \\ x > 0 \quad II \end{array} \right. \Rightarrow I \cap II = Q = (0, r) \quad (9) \quad \text{الف}$$

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$$\left\{ \begin{array}{l} 1 - \log_{\frac{1}{r}} x > 0 \rightarrow \log_{\frac{1}{r}} x < 1 \rightarrow x < \frac{1}{r} \quad I \\ x > 0 \quad II \end{array} \right. \Rightarrow I \cap II = Q = (0, \frac{1}{r}) \quad \text{ب}$$

$$\log_{\frac{1}{r}} x < 1 \rightarrow x > \frac{1}{r}$$

مجاوبین ۵۰ الی ۱۰۰ مثبت نامعادله تغییر کردند

$$Q = (\frac{1}{r}, +\infty)$$

$$\frac{r^x - r^y}{r^x - r^y} \geq 0 \rightarrow \frac{r^x - r^y}{r^x - r^y} \geq r^x \rightarrow r^x - r^y \geq r^x \quad (10) \quad \text{الف}$$

$$r^y - r^x + r^x \leq 0$$

$$(x - y)(x - 1) \leq 0$$

$$+ \frac{1}{r} - \frac{r}{r} +$$

$$Q = [1, r]$$

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$$\frac{rx + a}{rx + b} \in W \rightarrow x \in \frac{rw - a}{rw - b} \rightarrow Q = \{x \mid x = \frac{rk - a}{rk - b}, k \in W\} \quad \text{ب}$$

الف - 4) $[-n] - 2 \geq 0 \rightarrow [-n] \geq 2 \rightarrow -n \geq 2 \rightarrow n \leq -2 \rightarrow D_f = (-\infty, -2]$

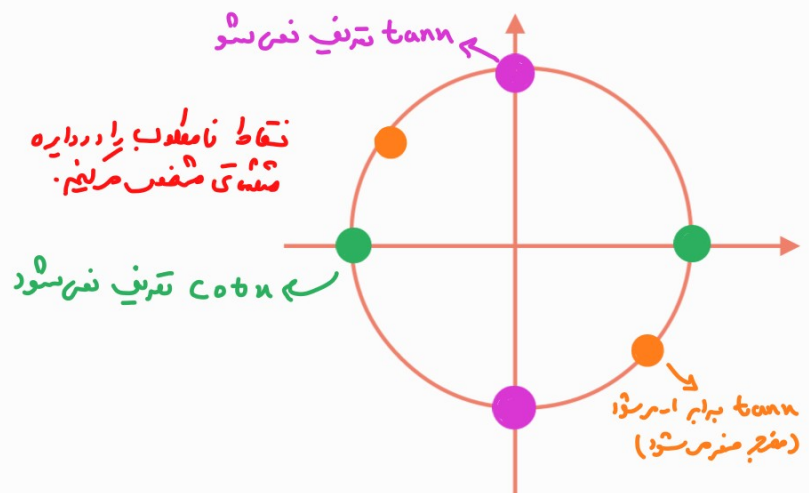
الف - 4) $y = \frac{\cot x + 1}{\tan x + 1}$

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

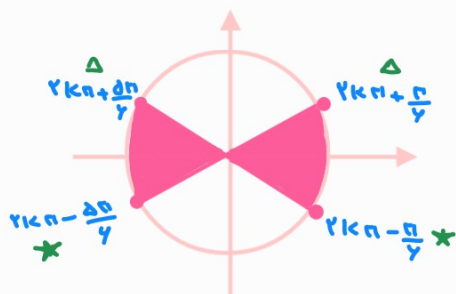
$x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi$

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

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



ب - 4) $1 - 4\sin^2 x \geq 0 \rightarrow 4\sin^2 x \leq 1 \rightarrow \sin^2 x \leq \frac{1}{4} \rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$



$D_f = \left[k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6} \right]$

ب - 4) $y = \log_2 (1 - \log_{\frac{1}{2}} \frac{n}{2}) \rightarrow \log_{\frac{1}{2}} \frac{n}{2} \rightarrow n > 0$

$\rightarrow 1 - \log_{\frac{1}{2}} \frac{n}{2} > 0 \rightarrow \log_{\frac{1}{2}} \frac{n}{2} < 1 \xrightarrow{\text{مضابین (عکس)}} n > \frac{1}{2}$

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