

الف) $\frac{\cos x + 1}{\tan x} > 0$

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

$D_f = \mathbb{R} - \{k\pi - \frac{\pi}{4}, k\pi\}$ $\tan x, \cot x$ $\rightarrow x \neq \frac{k}{2}\pi$

ب) $1 - \sqrt{\sin^2 x} > 0$

$1 > \sqrt{\sin^2 x} \Rightarrow \frac{1}{2} > \sin^2 x \Rightarrow -\frac{1}{2} < \sin x < \frac{1}{2}$

$D_f = [\frac{5\pi}{4}, \frac{7\pi}{4}] \cup [\frac{3\pi}{4}, \frac{5\pi}{4}]$

الف) $\sqrt{\sin x} - 1 > 0 \Rightarrow \sin x > 1 \Rightarrow D_f = [\frac{5\pi}{4}, \frac{7\pi}{4}]$

ب) $1 - \sqrt{\cos x} > 0 \Rightarrow \frac{1}{2} > \cos x \Rightarrow D_f = [\frac{\pi}{3}, \frac{5\pi}{3}]$

الف) $1 > x^2 + 3x + 1 > -1$

$0 > x^2 + 3x \Rightarrow x(x+3) > 0$

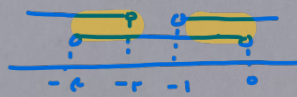
$0 > x(x+3) \Rightarrow (x+1)(x+2) > 0$

$-\frac{3}{2} < x < -\frac{1}{2}$

$-\frac{2}{3} < x < -\frac{1}{3}$

$\rightarrow D_f = (-\infty, -\frac{3}{2}] \cup [-\frac{1}{2}, +\infty)$

$D_f = [-\frac{3}{2}, -\frac{1}{2}] \cup [-\frac{2}{3}, -\frac{1}{3}]$



باین بین ۳ بازه اشتراک گیری:

ب) $1 > \sqrt{\omega - 2x} > -1$

$1 > \sqrt{\omega - 2x} > 0 \Rightarrow \omega - 2x > 0 \Rightarrow -x > -\frac{\omega}{2} \Rightarrow x < \frac{\omega}{2}$

$D_f = [\frac{\omega}{2}, \frac{\omega}{2}]$

الف) $1 - \log_x^2 > 0$

$1 > \log_x^2 \Rightarrow x > 1 > 0 \Rightarrow D_f = (1, \infty)$

ب) $1 - \log_{\frac{x}{2}} > 0$

$1 > \log_{\frac{x}{2}} \Rightarrow x > \frac{1}{2} \Rightarrow D_f = (\frac{1}{2}, +\infty)$

الف) $\sqrt{x - x^2} - 1 > 0$

$\sqrt{x - x^2} > 1 \Rightarrow x - x^2 > 1 \Rightarrow (x-1)(x-2) > 0$

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

$D_f = [1, 2]$

ب) $\frac{\sqrt{x + \omega}}{\sqrt{x + \kappa}} \in W \Rightarrow \sqrt{x + \omega} + \sqrt{x + \kappa} \in W$

$\sqrt{x + \omega} - \sqrt{x + \kappa} \in W - \sqrt{x + \kappa}$

$x(\sqrt{x + \omega} - \sqrt{x + \kappa}) \in W - \sqrt{x + \kappa}$

$x \in \frac{W - \sqrt{x + \kappa}}{\sqrt{x + \omega} - \sqrt{x + \kappa}}$

$D_f = \{x \in \frac{W - \sqrt{x + \kappa}}{\sqrt{x + \omega} - \sqrt{x + \kappa}} \mid \kappa \in W\}$

۱۹,۲۵

اسم و نام خانوادگی:
 شماره: ۱۹,۲۵

$$y = \frac{x+w}{(\sqrt{x-1})(x+w)(x-1)} \quad (1) \text{ الف}$$

$$D_f = R - \{1\}$$

$$y = \frac{x+w}{(\sqrt{x+1})(x+w)(x+1)} \quad (2) \text{ ب}$$

$$D_f = R - \{-1\}$$

$$y = \frac{x-1}{(\sqrt{x^2-x+1})(x-1)} \quad (3) \text{ الف}$$

$$D_f = R - \{1\}$$

$$y = \sqrt{\frac{x+w}{(x^2-x+1)(x-1)}} \quad (4) \text{ ب}$$

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

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

$$x > 1 \rightarrow y = \frac{1}{x^2 - \sqrt{x+1} + 1} = \frac{1}{(x-1)(x-1)} \rightarrow \frac{1}{(x-1)^2}$$

$$x < 1 \rightarrow y = \frac{1}{x^2 - \sqrt{x-1} + 1} = \frac{1}{x(x+w)} \rightarrow \frac{1}{x(x+w)}$$

چرا این مسأله ندری؟ فقط باید مقرر صفر

$$[x] - y \geq 0 \rightarrow [x] \geq y \rightarrow x \leq y \rightarrow D_f = (-\infty, -y] \quad (5) \text{ الف}$$

$$[x] - y \neq 0 \rightarrow ([x] - y)([x] + y) \neq 0 \rightarrow D_f = (-\infty, -y] \cup (y, +\infty) \quad (6) \text{ ب}$$

$$[x - \frac{1}{w}] + [x + \frac{1}{w}] \geq 0 \rightarrow [x - \frac{1}{w}] + [x + \frac{1}{w}] - 1 + 1 = [x - \frac{1}{w}] + 1 \geq 0$$

$$[x - \frac{1}{w}] \geq -1 \rightarrow x - \frac{1}{w} \geq 0 \rightarrow x \geq \frac{1}{w} \rightarrow D_f = [\frac{1}{w}, +\infty) \quad (7) \text{ الف}$$

$$[x - \frac{1}{w}] + [\frac{1}{w} - x] \geq 0 \rightarrow [x - \frac{1}{w}] + [-(x - \frac{1}{w})] \geq 0$$

$$\rightarrow D_f = \{k + \frac{1}{w} \mid k \in \mathbb{Z}\}$$

۳- کمن عبارت مفرج را دستکاری می کنیم تا ک ساده تر شود...

$$(x^2 - x_{n+1}) - 5|x-1| + 4 \rightarrow (x-1)^2 - 5|x-1| + 4 \xrightarrow{|x-1|=t} t^2 - 5t + 4$$

$$(t-1)(t-4) = 0 \rightarrow t=1, t=4$$

$$\rightarrow D_f = \mathbb{R} - \{-3, 0, 2, 5\}$$

$$|x-1|=1 \rightarrow x=2, 0 \quad |x-1|=4 \rightarrow x=5, -3$$

$$8 - \text{الف} - 1 \leq x^2 + x_n + 1 \leq 1 \xrightarrow{\frac{9}{4} - \frac{9}{4}} -1 \leq x^2 + x_n + \frac{9}{4} - \frac{9}{4} \leq 1$$

$$\frac{1}{2} \leq x^2 + x_n + \frac{9}{4} \leq \frac{9}{2} \rightarrow \frac{1}{2} \leq (x + \frac{3}{2})^2 \leq \frac{9}{2}$$

$$\cap (x + \frac{3}{2})^2 \leq \frac{9}{2} \rightarrow -\frac{3}{2} \leq x + \frac{3}{2} \leq \frac{3}{2} \rightarrow -3 \leq x \leq 0 \quad I$$

$$\cup (x + \frac{3}{2})^2 \geq \frac{1}{2} \rightarrow x + \frac{3}{2} \geq \frac{1}{2} \rightarrow x \geq -1 \quad \cup \quad x + \frac{3}{2} \leq -\frac{1}{2} \rightarrow x \leq -2 \quad II$$

$$I \cap II \rightarrow D_f = [-3, -2] \cup [-1, 0]$$