

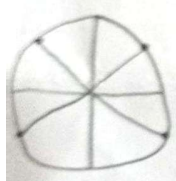
سوال ۸

الف) $y = \sqrt{\left[x - \frac{1}{x}\right] + \left[x + \frac{1}{x}\right]} \rightarrow \underbrace{\left[x - \frac{1}{x}\right]}_{x-1} + \underbrace{\left[x + \frac{1}{x}\right]}_x \geq 0$
 $\Rightarrow 2x - 1 \geq 0 \Rightarrow 2x \geq 1$
 $\Rightarrow D = \left[\frac{1}{2}, +\infty\right)$

ب) $y = \sqrt{\left[x - \frac{1}{x}\right] + \left[-x + \frac{1}{x}\right]} \rightarrow \underbrace{\left[x - \frac{1}{x}\right]}_x + \underbrace{\left[-x + \frac{1}{x}\right]}_{-x} \geq 0$
 $\Rightarrow D = \mathbb{R}$

سوال ۹

الف) $y = \frac{1}{\sqrt{\sin^2 x - 1}} \rightarrow \sqrt{\sin^2 x - 1} \neq 0 \Rightarrow \sin^2 x \neq 1 \Rightarrow \sin x \neq \pm 1$
 $\Rightarrow \sin x \neq \pm \frac{1}{\sqrt{y}} \Rightarrow \sin x \neq \pm \frac{\sqrt{y}}{y} \Rightarrow D = \mathbb{R} - \left\{k\pi \pm \frac{\pi}{2}\right\}$



ب) $y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \frac{\frac{\cos x}{\sin x} + 1}{\frac{\sin x}{\cos x} + 1} \rightarrow \sin x \neq 0$
 $\rightarrow \tan x + 1 \neq 0 \Rightarrow \tan x \neq -1$
 $\rightarrow \frac{\sin x}{\cos x} + 1 \neq 0 \Rightarrow \cos x \neq 0$
 $\Rightarrow D = \mathbb{R} - \left\{k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\right\}$

سوال ۱۰

الف) $y = \sqrt{y \sin x - 1} \rightarrow y \sin x - 1 \geq 0 \Rightarrow \sin x \geq \frac{1}{y}$
 $\Rightarrow D = \left\{x \geq \frac{\pi}{2}\right\}$

ب) $y = \sqrt{1 - y \cos x} \rightarrow 1 - y \cos x \geq 0 \Rightarrow 1 \geq y \cos x \Rightarrow \frac{1}{y} \geq \cos x$
 $\Rightarrow D = \left\{x \leq \frac{\pi}{y}\right\}$

الف) $y = \sqrt{4-x} - \sqrt{2-x}$ $\left\{ \begin{array}{l} 4-x \geq 0 \Rightarrow x \leq 4 \\ 2-x \geq 0 \Rightarrow x \leq 2 \end{array} \right\} \Rightarrow D = [-2, 2]$ سوال یک

ب) $y = \sqrt{4-x} - \sqrt{x-2}$ $\left\{ \begin{array}{l} 4-x \geq 0 \Rightarrow x \leq 4 \\ x-2 \geq 0 \Rightarrow x \geq 2 \end{array} \right\} \Rightarrow D = [2, 4]$



الف) $y = \sqrt{4-2x^2} \rightarrow 4-2x^2 \geq 0 \Rightarrow 2 \geq x^2 \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2} \Rightarrow D = [-\sqrt{2}, \sqrt{2}]$ سوال ۲

ب) $y = \sqrt{3|x|-9} \rightarrow 3|x|-9 \geq 0 \Rightarrow 3|x| \geq 9 \Rightarrow D = \mathbb{R} - (-3, 3)$

الف) $y = 3\sqrt{\frac{|x|+1}{|x|-3}}$ $\rightarrow |x|-3 \neq 0 \Rightarrow |x| \neq 3 \Rightarrow D = \mathbb{R} - \{\pm 3\}$ سوال ۳

ب) $y = 3\sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $\left\{ \begin{array}{l} x \geq 0 \\ \sqrt{x}-3 \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9 \end{array} \right\} \Rightarrow D = \mathbb{R}^+ \cup \{0\} - \{9\}$

الف) $y = \frac{\sqrt{3-|x|}}{|x|+2}$ $\left\{ \begin{array}{l} 3-|x| \geq 0 \Rightarrow |x| \leq 3 \\ |x|+2 \neq 0 \Rightarrow |x| \neq -2 \text{ (همیشه درست)} \end{array} \right\} \Rightarrow D = [-3, 3]$ سوال ۴

ب) $y = \frac{\sqrt{4-x^2}}{|x|-1}$ $\left\{ \begin{array}{l} 4-x^2 \geq 0 \Rightarrow -2 \leq x \leq 2 \\ |x|-1 \neq 0 \Rightarrow |x| \neq 1 \Rightarrow x \neq \pm 1 \end{array} \right\} \Rightarrow D = [-2, -1) \cup (-1, 1) \cup (1, 2]$

الف) $y = \frac{x+1}{\sqrt{x+|x|}}$ $\rightarrow x+|x| \neq 0 \Rightarrow D = (0, +\infty)$ سوال ۵

ب) $y = \frac{1}{\sqrt{x|x|}}$ $\rightarrow x|x| \neq 0 \Rightarrow D = \mathbb{R} - \{0\}$

الف) $y = \sqrt{2-[x]}$ $\rightarrow 2-[x] \geq 0 \Rightarrow 2 \geq [x] \Rightarrow D = (-\infty, 3)$ سوال ۶

ب) $y = \frac{1}{\sqrt{2-[x]}}$ $\rightarrow 2-[x] > 0 \Rightarrow 2 > [x] \Rightarrow D = (-\infty, 2)$

الف) $y = \frac{1}{x[x]}$ $\rightarrow x[x] \neq 0 \Rightarrow D = \mathbb{R} - [0, 1)$ سوال ۷

ب) $y = \frac{1}{\sqrt{-x[x]}}$ $\rightarrow -x[x] > 0 \Rightarrow D = \emptyset$