

سوال ۶ الف) $y = \sqrt{2-x}$ $2-x \geq 0 \rightarrow x \leq 2 \rightarrow Df = (-\infty, 2]$

ب) $y = \frac{1}{\sqrt{2-x}}$ $2-x > 0 \rightarrow x < 2 \rightarrow Df = (-\infty, 2)$

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

ب) $y = \frac{1}{\sqrt{-x[x]}}$ $-x[x] > 0$
 $\oplus \times \ominus \times \odot \times$ } $Df = \emptyset$

سوال ۸ الف) $y = \sqrt{[x-\frac{1}{3}] + [x+\frac{1}{3}]}$ $[x-\frac{1}{3}] + [x+\frac{1}{3}] + 1 \geq 1 \rightarrow [x+\frac{1}{3}] + [x+\frac{1}{3}] \geq 1$

$2[x+\frac{1}{3}] \geq 1 \rightarrow [x+\frac{1}{3}] \geq \frac{1}{2} \rightarrow x+\frac{1}{3} \geq 1 \rightarrow x \geq \frac{2}{3} \rightarrow Df = [\frac{2}{3}, +\infty)$

ب) $y = \sqrt{[x-\frac{1}{3}] + [-x+\frac{1}{3}]}$ $\rightarrow \sqrt{[a] + [-a]} \rightarrow [a] + [-a] \geq 0 \rightarrow a \in \mathbb{Z} \rightarrow x-\frac{1}{3} \in \mathbb{Z}$
 $x \in \mathbb{Z} + \frac{1}{3} \rightarrow Df = \{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\}$

سوال ۹ $\sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq 1 \rightarrow \sin^2 x \neq \frac{1}{4}$

الف) $y = \frac{1}{2 \sin^2 x - 1}$ $Df = \mathbb{R} - \{k\pi \pm \frac{\pi}{4}\}$

$\sin x \neq \pm \frac{\sqrt{2}}{2}$

ب) $y = \frac{\cot x + 1}{\tan x + 1}$ $\cot x = \frac{\cos x}{\sin x} \rightarrow \sin x \neq 0 \rightarrow x \neq k\pi$
 $\tan x = \frac{\sin x}{\cos x} \rightarrow \cos x \neq 0 \rightarrow x \neq \frac{\pi}{2}, \frac{3\pi}{2}$

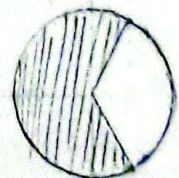
$\tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \rightarrow x \neq k\pi + \frac{3\pi}{4}, k\pi + \frac{7\pi}{4}$ } $Df = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{4}\}$

سوال ۱۰ الف) $y = \sqrt{2 \sin x - 1}$ $2 \sin x - 1 \geq 0 \rightarrow 2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2}$
 $Df = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$



ب) $y = \sqrt{1 - 2 \cos x}$ $1 - 2 \cos x \geq 0 \rightarrow 2 \cos x \leq 1 \rightarrow \cos x \leq \frac{1}{2}$

$Df = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$



دورا نبرایی زاده کالیف ۴ زهره دختر

سوال (1) هورا کب دیا زان

الف) $y = \sqrt{4 - \sqrt{2-x}}$ $x-2 \geq 0 \rightarrow -2 \geq -x \rightarrow x \leq 2$ $I \Rightarrow I \cap II = [-1, 2]$
 $4 - \sqrt{2-x} \geq 0 \rightarrow -\sqrt{2-x} \geq -4 \rightarrow \sqrt{2-x} \leq 4 \rightarrow 2-x \leq 16 \rightarrow -x \leq 14 \rightarrow x \geq -14$ II
 جواب الف الف $Df = [-1, 2]$

ب) $y = \sqrt{3 - \sqrt{x-2}}$ $x-2 \geq 0 \rightarrow x \geq 2$ ①
 $3 - \sqrt{x-2} \geq 0 \rightarrow -\sqrt{x-2} \geq -3 \rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9$
 $x \leq 11$ ② $Df = (1, 11]$ ب

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

ب) $y = \sqrt{3|x|-9}$ $3|x|-9 \geq 0 \rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow x \geq 3$
 $x \leq -3 \rightarrow Df = (-\infty, -3] \cup [3, +\infty)$ ب

سوال (3) الف) $y = \sqrt{\frac{|x|+1}{|x|-3}}$ $|x|-3 \neq 0 \rightarrow |x| \neq 3 \rightarrow x \neq +3, -3 \Rightarrow$
 $Df = R - \{-3, 3\}$ الف

ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $\sqrt{x}-3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9$ ①
 $x \geq 0$ (1) $\xrightarrow{\text{طبق اول}} Df = [0, +\infty) - \{9\}$ ب

سوال (4) الف) $y = \frac{\sqrt{3-|x|}}{|x|+2}$ $3-|x| \geq 0 \rightarrow -|x| \geq -3 \rightarrow |x| \leq 3 \rightarrow -3 \leq x \leq 3$ ①
 $|x|+2 \neq 0 \rightarrow |x| \neq -2 \rightarrow$ ② $\xrightarrow{\text{طبق اول}} Df = [-3, 3]$ الف

ب) $y = \frac{\sqrt{4-x^2}}{|x|-1}$ $4-x^2 \geq 0 \rightarrow -x^2 \geq -4 \rightarrow x^2 \leq 4 \rightarrow -2 \leq x \leq 2$ ①
 $|x|-1 \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq +1, -1$ ② $\xrightarrow{\text{طبق اول}} Df = [-2, 2] - \{-1, 1\}$ ب

سوال (5) الف) $y = \frac{x+1}{\sqrt{x+|x|}}$ $x+|x| > 0 \rightarrow x > -|x| \Rightarrow Df = R^+$ الف
 (+) ✓
 (-) ○

ب) $y = \frac{1}{\sqrt{x|x|}}$ $x|x| > 0 \rightarrow$ $Df = R^+$ ب
 مثبت و $x \neq 0$ چون تعریف بشرطی شود