

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

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

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

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

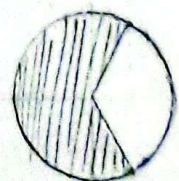
سوال ۹ الف) $y = \frac{1}{2 \sin^2 x - 1}$ $Df = \mathbb{R} - \{k\pi \pm \frac{\pi}{4}\}$
 $2 \sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq \frac{1}{2} \rightarrow \sin^2 x \neq \frac{1}{4}$
 $\sin x \neq \pm \frac{\sqrt{2}}{2}$

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

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

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



دوره دبیرانی زاده تکلیف ۴ (نهم دختر)

سوال (۱) هورا کبیایی زا (۵)

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

$4 - \sqrt{2 - x} \geq 0 \rightarrow -\sqrt{2 - x} \geq -4 \rightarrow \sqrt{2 - x} \leq 4 \rightarrow 2 - x \leq 16 \rightarrow -x \leq 14 \rightarrow x \geq -14$ II

جواب الف الف $Df = [-14, 2]$

ب) $y = \sqrt{3 - \sqrt{x - 2}}$ $x - 2 \geq 0 \rightarrow x \geq 2$ $\textcircled{1}$

$3 - \sqrt{x - 2} \geq 0 \rightarrow -\sqrt{x - 2} \geq -3 \rightarrow \sqrt{x - 2} \leq 3 \rightarrow x - 2 \leq 9 \rightarrow x \leq 11$ $\textcircled{2}$

$Df = (11, 2) =$
ب $Df = [2, 11]$

سوال (۲) الف) $y = \sqrt{4 - 2x^2} \rightarrow 4 - 2x^2 \geq 0 \rightarrow -2x^2 \geq -4 \rightarrow x^2 \leq 2 \rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$

الف $Df = [-\sqrt{2}, +\sqrt{2}]$

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

ب

سوال (۳)

الف) $y = \sqrt[3]{\frac{|x| + 1}{|x| - 3}}$ $|x| - 3 \neq 0 \rightarrow |x| \neq 3 \rightarrow x \neq +3, -3 \Rightarrow$

الف $Df = R - \{-3, 3\}$

ب) $y = \sqrt{\frac{\sqrt{x} + 1}{\sqrt{x} - 3}}$ $\sqrt{x} - 3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9$

$x \geq 0$ $\textcircled{1}$

طبقه اول

ب $Df = [0, +\infty) - \{9\}$

سوال (۴) الف) $y = \frac{\sqrt{3 - |x|}}{|x| + 2}$ $3 - |x| \geq 0 \rightarrow -|x| \geq -3 \rightarrow |x| \leq 3 \rightarrow -3 \leq x \leq 3$ $\textcircled{1}$

$|x| + 2 \neq 0 \rightarrow |x| \neq -2 \rightarrow$ $\textcircled{2}$ $\textcircled{1} \cap \textcircled{2} \rightarrow Df = [-3, 3]$ الف

$4 - x^2 \geq 0 \rightarrow -x^2 \geq -4 \rightarrow x^2 \leq 4 \rightarrow -2 \leq x \leq 2$ $\textcircled{1}$

ب) $y = \frac{\sqrt{4 - x^2}}{|x| - 1}$ $|x| - 1 \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq +1, -1$ $\textcircled{2}$

$\textcircled{1} \cap \textcircled{2} \rightarrow Df = [-2, 2] - \{-1, 1\}$

ب

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

$\textcircled{+}$
 $\textcircled{-}$
 $\textcircled{0}$

سوال (۵)

ب) $y = \frac{1}{\sqrt{x|x|}}$ $x|x| > 0 \rightarrow$ $Df = R^+$

مثبت و $x \neq 0$ چون تعریف ندارد