نام و نام خانوادگی ....پارسا امیرجدید.............. پاسخنامه تشریحی تکلیف شماره ...۴.... کلاس ....13.........................

۱۹,۲۵

۱	الف) $\sqrt{4-\sqrt{2-x}} \Rightarrow 2-x \geq 0 \Rightarrow \boxed{x \leq 2}$ و $4-\sqrt{2-x} \geq 0 \Rightarrow 4 \geq \sqrt{2-x}$, $16 \geq 2-x$, $\boxed{x \geq -14}$ $\Rightarrow D_f = [-14, 2]$ ✓ ۲ ب) $\sqrt{3-\sqrt{x-2}} \Rightarrow x-2 \geq 0 \Rightarrow \boxed{x \geq 2}$; $3-\sqrt{x-2} \geq 0 \Rightarrow 3 \geq \sqrt{x-2} \Rightarrow 9 \geq x-2 \Rightarrow \boxed{x \leq 11}$; $D_f = [2, 11]$ ✓
۲	الف) $y = \sqrt{4-2x^2} \Rightarrow 4-2x^2 \geq 0 \Rightarrow 4 \geq 2x^2 \Rightarrow 2 \geq x^2 \Rightarrow$ [redacted] $\sqrt{2} \geq x \geq -\sqrt{2}$, $[-\sqrt{2}, \sqrt{2}]$ ✓ ۲ ب) $\sqrt{3\|x\|-9} \Rightarrow 3\|x\|-9 \geq 0 \Rightarrow 3\|x\| \geq 9 \Rightarrow \|x\| \geq 3 \Rightarrow x \geq 3$, $x \leq -3$; $D_f = (-\infty, -3] \cup [3, \infty)$ ✓
۳	$y = \sqrt[3]{\dfrac{\|x\|+1}{\|x\|-3}} \Rightarrow \|x\|-3 \neq 0$, $\|x\| \neq 3 \Rightarrow D_f = R - \{-3, 3\}$ ✓ ; $x \neq \{3, -3\}$ ۲ $y = \sqrt[3]{\dfrac{\sqrt{x}+1}{\sqrt{x}-3}} \Rightarrow x \geq 0$, $\sqrt{x}-3 \neq 0$, $\sqrt{x} \neq 3 \Rightarrow x \neq 9$; $\Rightarrow D_f = [0, \infty) - \{9\}$ ✓
۴	الف) $y = \dfrac{\sqrt{3-\|x\|}}{\|x\|+2} \Rightarrow 3-\|x\| \geq 0 \Rightarrow 3 \geq \|x\| \Rightarrow \boxed{3 \geq x \geq -3}$ ✓ ۲ ب) $y = \dfrac{\sqrt{4-x^2}}{\|x\|-1}$; $4-x^2 \geq 0$, $4 \geq x^2 \Rightarrow 2 \geq x \geq -2$; $\|x\|-1 \neq 0 \Rightarrow \|x\| \neq 1$, $x \neq \{-1, 1\}$; $\Rightarrow D_f = [-2, 2] - \{-1, 1\}$ ✓
۵	الف) $x+\|x\| > 0$; $+ \to$ ✓, $0 \to$ ✗, $- \to$ ✗ ; $D_f = (0, \infty)$ or R^+ ✓ ۲ ب) $x\|x\| > 0$; $+$ ✓, $-$ ✗, 0 ✗ ; R^+ ✓

۶ الف) $2-[x] \geq 0 \Rightarrow [x] \leq 2 \Rightarrow Df = (-\infty, 3)$ ✓ (۲)

ب) $2-|x| > 0 \Rightarrow |x| < 2 \Rightarrow Df = (-\infty, 2)$ ✓

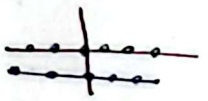
۷ الف) $x|x| \neq 0 \Rightarrow x = 0 \quad |x| = 0 \Rightarrow x = [0,1)$ $R - [0,1)$ ✓ (۲)

ب) $-x|x| > 0 \Rightarrow \emptyset$ ✓

x و برابر آن علاوه هم علامت

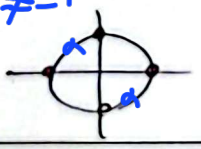
۸ الف) $[x-\frac{1}{2}] + [x-\frac{1}{2}] + 1 \geq 0 \quad 2[x-\frac{1}{2}] \geq -1 \Rightarrow [x-\frac{1}{2}] \geq -\frac{1}{2}$

$\hookrightarrow Df = [\frac{1}{2}, \infty)$ ✓ (۲)

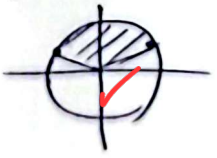
ب) $\sqrt{[x-\frac{1}{2}] + [-x+\frac{1}{2}]}$ طبق شکل  $x - \frac{1}{2} \in \mathbb{Z} \Rightarrow \{x = \frac{1}{2} + k, k \in \mathbb{Z}\}$ ✓

۹ الف) $2\sin^2 x - 1 \neq 0 \quad 2\sin^2 x \neq 1 \Rightarrow \sin^2 x \neq \frac{1}{2} \quad \sin x \neq \pm\frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

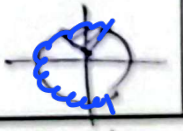
$R - \{k\pi \pm \frac{\pi}{4}\}$ ✓ (۱,۷۵)

ب) $\sin x \neq 0$, $\cos x \neq 0$ $\Rightarrow$ $\tan x \neq -1$  $R - \{\frac{k\pi}{2}\}$ $D_f = R - \{\frac{k\pi}{2}, k\pi - \frac{\pi}{4}\}$

۱۰ الف) $2\sin x - 1 \geq 0 \Rightarrow 2\sin x \geq 1 \Rightarrow \sin x \geq \frac{1}{2}$ ✓ (۱,۵)

 $[k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6}]$

$D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $1 - 2\cos x \geq 0 \Rightarrow 1 \geq 2\cos x \Rightarrow \frac{1}{2} \geq \cos x$ ✓ 

$R - \{k\pi - \frac{\pi}{3}, k\pi + \frac{\pi}{3}\}$

$D_f = [2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3}]$