

نام و نام خانوادگی آینه کلاس شماره پاسخنامه تشریحی تکلیف شماره ۴ A دهه

الف) $y = \sqrt{4 - \sqrt{2-x}}$ $\rightarrow D_f = [-14, 2]$	$\begin{cases} 2-x \geq 0 \\ 2 \geq x \end{cases}$ $\begin{cases} 4 - \sqrt{2-x} \geq 0 \\ 4 \geq \sqrt{2-x} \\ 16 \geq 2-x \rightarrow x \geq 2-16 = -14 \end{cases}$ $-14 \leq x \leq 2$	1
ب) $y = \sqrt{3 - \sqrt{x-2}}$ $\rightarrow D_f = [2, 11]$	$\begin{cases} x-2 \geq 0 \\ x \geq 2 \end{cases}$ $\begin{cases} 3 - \sqrt{x-2} \geq 0 \\ 3 \geq \sqrt{x-2} \rightarrow 9 \geq x-2 \end{cases}$ $11 \geq x$ $2 \leq x \leq 11$	2
الف) $y = \sqrt{4 - 2x^2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$	$\begin{cases} 4 - 2x^2 \geq 0 \\ 4 \geq 2x^2 \end{cases}$ $2 \geq x^2 \rightarrow \pm \sqrt{2} \geq x \rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$	3
ب) $y = \sqrt{3 x - 9}$ $D_f = (-\infty, -3] \cup [3, +\infty)$	$3 x - 9 \geq 0$ $3 x \geq 9$ $ x \geq 3$ $x \leq -3 \text{ یا } x \geq 3$	4
الف) $y = \sqrt[3]{\frac{ x +1}{ x -3}}$ $D_f = \mathbb{R} \cdot \{\pm 3\}$	$\begin{cases} x - 3 \neq 0 \\ x \neq 3 \end{cases}$ $\begin{cases} x = 3 \\ x = -3 \end{cases}$	5
ب) $y = \sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $D_f = \mathbb{R} \cdot \{9\}$	$\begin{cases} \sqrt{x} - 3 \neq 0 \\ \sqrt{x} \neq 3 \end{cases}$ $x \neq 9$	6
الف) $y = \frac{\sqrt{3- x }}{ x +2}$ $D_f = [-3, 3]$	$\begin{cases} x +2 \neq 0 \\ x \neq -2 \end{cases}$ $\begin{cases} 3- x \geq 0 \\ 3 \geq x \end{cases}$ $-3 \leq x \leq 3$	7
ب) $y = \frac{\sqrt{3-x^2}}{ x -1}$ $D_f = [-2, 2] - \{-1\}$	$\begin{cases} x -1 \neq 0 \\ x \neq 1 \end{cases}$ $ x \neq 1 \rightarrow x \neq -1$ $\begin{cases} 3-x^2 \geq 0 \\ 3 \geq x^2 \end{cases}$ $-2 \leq x \leq 2$	8
الف) $y = \frac{x+1}{\sqrt{x+ x }}$ $D_f = (0, +\infty)$	$x+ x \geq 0$ $x \geq - x $	9
ب) $y = \frac{1}{\sqrt{x x }}$ $D_f = (0, +\infty)$	$x x \geq 0$	10

برای صفر و منفی مانتعرف نشود

الف) $y = \sqrt{2 - [x]}$ $\begin{matrix} 2 - [x] \geq 0 \\ 2 \geq [x] \\ 1.7 \end{matrix}$ $D_f = (-\infty, 3)$

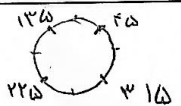
ب) $y = \frac{1}{\sqrt{2 - [x]}}$ $\begin{matrix} 2 - [x] > 0 \\ 2 > [x] \\ 1.7 \end{matrix}$ $D_f = (-\infty, 2)$

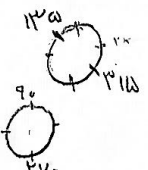
الف) $y = \frac{1}{x[x]}$ $\begin{matrix} x[x] \neq 0 \\ x \neq 0 \\ [x] \neq 0 \\ 0.9 \end{matrix}$ $D_f = \mathbb{R} - [0, 1)$

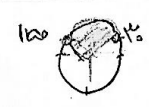
ب) $y = \frac{1}{\sqrt{-x[x]}}$ $\begin{matrix} -x[x] > 0 \\ [x] > x \end{matrix} \rightarrow D_f = \emptyset$
 عند $x = -1$ $\downarrow$ قابل قبول

الف) $y = \sqrt{[x - \frac{1}{x}] + [x + \frac{1}{x}]}$ $[x - \frac{1}{x} + 1 - 1] + [x + \frac{1}{x}] \geq 0$ $\begin{matrix} 2[x + \frac{1}{x}] - 1 \geq 0 \\ [x + \frac{1}{x}] \geq \frac{1}{2} \\ [x + \frac{1}{x}] \geq 1 \\ x \geq 1 - \frac{1}{x} = \frac{1}{x} \end{matrix}$
 $D_f = [\frac{1}{x}, +\infty)$

ب) $y = \sqrt{[x - \frac{1}{x}] + [-x + \frac{1}{x}]}$ $\begin{matrix} [a] + [-a] = 0 \quad a \in \mathbb{Z} \\ [a] + [-a] = -1 \quad a \notin \mathbb{Z} \end{matrix} \rightarrow x - \frac{1}{x} \in \mathbb{Z} \quad x \in \mathbb{Z} + \frac{1}{x}$
 $D_f = \{x/x = k + \frac{1}{x}, k \in \mathbb{Z}\}$

الف) $y = \frac{1}{x \sin^2 x - 1}$ $\begin{matrix} x \sin^2 x - 1 \neq 0 \\ x \sin^2 x \neq 1 \\ \sin^2 x \neq \frac{1}{x} \\ \sin x \neq \pm \frac{1}{\sqrt{x}} \times \frac{\sqrt{x}}{\sqrt{x}} \end{matrix}$ 
 $D_f = \mathbb{R} - \left\{ \frac{k\pi}{x} + \frac{\pi}{x} \mid -\frac{k\pi}{x} \frac{\pi}{x} \right\}$

ب) $y = \frac{\cot x + 1}{\tan x + 1}$ $\begin{matrix} \tan x + 1 \neq 0 \\ \tan x \neq -1 \\ \cos x \neq 0 \end{matrix}$ 
 $D_f = \mathbb{R} - \left\{ 2k\pi + \frac{\pi}{x}, 2k\pi - \frac{\pi}{x}, 2k\pi + \frac{\pi}{x}, 2k\pi - \frac{\pi}{x} \right\}$

الف) $y = \sqrt{x \sin x - 1}$ $\begin{matrix} x \sin x - 1 \geq 0 \\ x \sin x \geq 1 \\ \sin x \geq \frac{1}{x} \end{matrix}$ 
 $D_f = [2k\pi + \frac{\pi}{x}, 2k\pi + \frac{\pi}{x}]$

ب) $y = \sqrt{1 - x \cos x}$ $\begin{matrix} 1 - x \cos x \geq 0 \\ 1 \geq x \cos x \\ \frac{1}{x} \geq \cos x \end{matrix}$ 
 $D_f = [2k\pi + \frac{\pi}{x}, 2k\pi - \frac{\pi}{x}]$