پانید آقائی

تکلیف شماره ۴ — به نام خدا — ۱۷ — دهم C دختران

---

۱) $y=\sqrt{4-\sqrt{2-x}} \to 2-x\geq 0 \quad 2\geq x \quad D_y=[-14,2]$ ✓ (۲)

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

$y=\sqrt{3-\sqrt{x-2}} \to x-2\geq 0 \to x\geq 2, \quad 3-\sqrt{x-2}\geq 0$

$D_y=[2,11]$ ✓ $\qquad 3\geq \sqrt{x-2} \to 9\geq x-2$

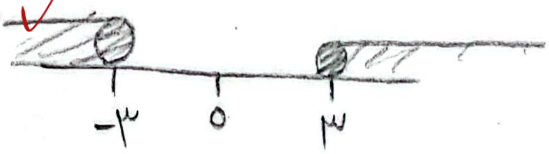
$11\geq x$

۲) $y=\sqrt{4-2x^2} \to 4-2x^2\geq 0 \to 4\geq 2x^2 \to 2\geq x^2 \xrightarrow{\sqrt{}}$ (۲)

$\sqrt{2}\geq x\geq -\sqrt{2}$ ✓

$y=\sqrt{3|x|-9} \to 3|x|-9\geq 0 \to 3|x|\geq 9 \to |x|\geq 3$

$x\geq 3 \cup x\leq -3$ ✓



۳) $y=\sqrt[3]{\dfrac{|x|+1}{|x|-3}} \to |x|-3\neq 0 \to x\neq -3,3$ (۲)

$D_f=R-\{-3,3\}$ ✓

$y=\sqrt[3]{\dfrac{\sqrt{x}+1}{\sqrt{x}-3}}$

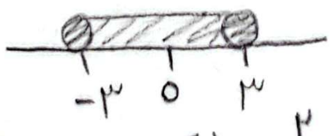
$\sqrt{x}+1 \to x\geq 0$

$\sqrt{x}-3 \to \sqrt{x}-3\neq 0 \to \sqrt{x}\neq 3 \quad x\neq 9$

$D_f=[0,+\infty)-\{9\}$ ✓

۴) $y=\dfrac{\sqrt{3-|x|}}{|x|+2} \to 3-|x|\geq 0 \quad 3\geq |x| \to -3\leq x\leq 3$ (۲)

$|x|+2$ صفر نمی‌شه



$y=\dfrac{\sqrt{4-x^2}}{|x|-1} \quad 4-x^2\geq 0 \to 4\geq x^2 \quad 2\geq x\geq -2$ ✓

$|x|-1 \to |x|-1\neq 0 \to |x|\neq 1 \quad x\neq 1,-1 \quad [-2,2]-\{1,-1\}$

$y=\frac{x+1}{\sqrt{x+|x|}} \to x+|x|>0 \quad \begin{matrix}+\surd\\ -\alpha\\ 0\alpha\end{matrix} \quad D_f=(0,+\infty)\to R^+$ (۵)

(۲)

$y=\frac{1}{\sqrt{x|x|}} \to x|x|>0 \quad \begin{matrix}+\surd\\ -\alpha\\ 0\alpha\end{matrix} \quad D_f=R^+$

$y=\sqrt{۲-[x]} \to ۲-[x]\geq 0 \to [x]\leq ۲$ (۶)

(۳)

$x<۳ \to (-\infty, ۳)$

$y=\frac{1}{\sqrt{۲-[x]}} \to ۲-[x]>0 \quad ۲>[x]$

$x<۲ \to (-\infty, ۲)$

$y=\frac{1}{x[x]} \to \begin{matrix}x\neq 0\\ [x]\neq 0\end{matrix} \quad \begin{matrix}x\geq 1,\ x\leq -1\\ (-\infty,-1]\cup[1,+\infty)\end{matrix}$ (۷)

(۱)

$\frac{1}{۲}$ $\quad$ 0

$y=\frac{1}{\sqrt{-x[x]}} \quad -x[x]>0 \quad \begin{matrix}+\alpha\\ -\alpha\\ 0\alpha\end{matrix} \to D_f=\emptyset$ ✓

$y=\sqrt{\left[x-\frac{1}{۳}\right]+\left[x+\frac{۲}{۳}\right]} \Rightarrow \left[x-\frac{1}{۳}\right]+\left[x+\frac{۲}{۳}\right]\geq 0$ (۸)

(۱/۵)

$\left[x+\frac{۲}{۳}-1\right]+\left[x+\frac{۲}{۳}\right]\geq 0 \quad \left[x+\frac{۲}{۳}\right]\geq \frac{1}{۲}$

$x+\frac{۲}{۳}\geq 1 \to x\geq \frac{1}{۳}$ ✓

$y=\sqrt{\left[x-\frac{1}{۳}\right]+\left[-x+\frac{1}{۳}\right]} \Rightarrow \underbrace{\left[x-\frac{1}{۳}\right]}_{a}+\left[-\underbrace{\left(x-\frac{1}{۳}\right)}_{a}\right]\geq 0$

$[a]+[-a]=0 \to a\in Z$ این

$[a]+[-a]=-1 \quad a\in Z$ این

۱/۵

$D_f=\{x \mid x=y+\frac{1}{۳}, y\in Z\}$

$x-\frac{1}{۳}\in Z$

$x\in Z+\frac{1}{۳}$

$D_f=\{x \mid x=k+\frac{1}{۳} \mid k\in Z\}$

(9

$y = \frac{1}{2\sin^2 x - 1} \Rightarrow 2\sin^2 x - 1 \neq 0$ ✓

$2\sin^2 x \neq 1 \rightarrow \sin^2 x \neq \frac{1}{2}$ ✓ واضح؟

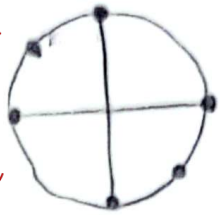
$\sin x \neq \pm\sqrt{\frac{1}{2}}$ ✗ ١٥°

(١٥

$D_f = \mathbb{R}$

$y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \tan x + 1 \neq 0$ ✓ $\tan x \neq -1$

$\cot \neq$ تعريف $\rightarrow k\pi$



$x = k\pi - \frac{\pi}{4}$, ✓

$k\pi + \frac{\pi}{2}$ ✓

$D_f = \mathbb{R} - \{k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{2}, k\pi\}$

$y = \sqrt{2\sin x - 1} \rightarrow 2\sin x \geq 1$ $\sin x \geq \frac{1}{2}$

١٥°

(١٥

$D_f = (2k\pi, k\pi)$ ✗

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

١٥°

$D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{4}, 2k\pi + \frac{\pi}{9}, 2k\pi\}$ ✗