

یک انوری - هم B

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سؤال ۱۵

الف) $y = \sqrt{4 - \sqrt{2 - x}} \Rightarrow$

I: $2 - x \geq 0 \rightarrow x \leq 2$

II: $4 - \sqrt{2 - x} \geq 0 \rightarrow \sqrt{2 - x} \leq 4 \rightarrow 2 - x \leq (4 - \sqrt{14 - x})^2$
 $D_f = (-\infty, 2] \cup [14, +\infty)$ $x \leq -12$

$D_y = [-12, 2]$

ب) $y = \sqrt{3 - \sqrt{x - 2}} \Rightarrow$ I: $x - 2 \geq 0 \rightarrow x \geq 2$ ✓

II: $3 - \sqrt{x - 2} \geq 0 \rightarrow \sqrt{x - 2} \leq 3 \rightarrow x - 2 \leq 9 \rightarrow x \leq 11$ ✓

$D_f = [2, 11]$ جواب $\rightarrow D_y = [2, 11]$

سؤال ۱۶

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

$D_f = [-\sqrt{2}, \sqrt{2}]$ ✓

$x \geq c \leq x \leq -c \quad D_f = \mathbb{R} - (-c, c)$

ب) $y = \sqrt{3|x| - 9} \rightarrow |x| \geq 3 \rightarrow -3 \leq x \leq 3 \rightarrow D_f = [-3, 3]$

سؤال ۱۷

الف) $y = \sqrt[3]{\frac{|x| + 1}{|x| - 3}} \Rightarrow |x| \neq 3 \rightarrow D_f = \mathbb{R} - \{\pm 3\}$

ب) $y = \sqrt[3]{\frac{\sqrt{x} + 1}{\sqrt{x} - 3}} \Rightarrow$ I: $x \geq 0$ ضرایب مل منفرد! $[0, +\infty) - \{9\}$
 II: $\sqrt{x} - 3 \neq 0 \rightarrow \sqrt{x} \neq 3 \rightarrow x \neq 9 \rightarrow D_f = \mathbb{R}^+ - \{9\}$ ↑

سؤال ۱۸

الف) $y = \frac{\sqrt{3|x|}}{|x| + 2} \Rightarrow$ I: $|x| \neq -2$ ✓ $-c \leq x \leq c \rightarrow D_f = [-c, c]$
 II: $3 - |x| \geq 0 \rightarrow |x| \leq 3 \rightarrow D_f = (-\infty, 3]$

ب) $y = \frac{\sqrt{4 - x^2}}{|x| - 1} \Rightarrow$ I: $|x| - 1 \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1$

II: $4 - x^2 \geq 0 \rightarrow x^2 \leq 4 \rightarrow -2 \leq x \leq 2$

$\rightarrow D_f = [-2, 2] - \{\pm 1\}$ ✓

سؤال ۱۹

الف) $y = \frac{x + 1}{\sqrt{x + |x|}}$ ۲ $\Rightarrow x + |x| \geq 0 \rightarrow D_f = (0, +\infty)$ ✓

ب) $y = \frac{1}{\sqrt{x|x|}}$ $\Rightarrow D_f = (0, +\infty)$ ✓

سؤال ٢

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

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

سؤال ٣

الف) $y = \frac{1}{x[x]} \rightarrow D_f = \mathbb{R} - \{0\}$ $[x] \neq 0 \rightarrow x \neq [0, 1)$
 $D_f \subset \mathbb{R} - [0, 1)$

ب) $y = \frac{1}{\sqrt{-x[x]}} \rightarrow D_f = \emptyset$

سؤال ٤

الف) $y = \sqrt{[x - \frac{1}{p}] + [x + \frac{p}{p}]} \rightarrow [x + \frac{p}{p} - 1] + [x + \frac{p}{p}] \geq 0$

$\rightarrow [x + \frac{p}{p}] - 1 + [x + \frac{p}{p}] \geq 0 \rightarrow 2[x + \frac{p}{p}] \geq 1 \rightarrow [x + \frac{p}{p}] \geq \frac{1}{2}$

$\rightarrow x + \frac{p}{p} \geq \frac{1}{2} \rightarrow x \geq \frac{1}{2} - \frac{p}{p} \rightarrow D_f = [\frac{1}{2} - \frac{p}{p}, +\infty)$

ب) $y = \sqrt{[x - \frac{1}{p}] + [-x + \frac{1}{p}]} \Rightarrow D_f = \{x | x = k + \frac{1}{p}, k \in \mathbb{Z}\}$

سؤال ٥

الف) $y = \frac{1}{r \sin x - 1} \rightarrow r \sin x - 1 \neq 0 \rightarrow \sin x \neq \pm \frac{1}{r}, \frac{\sqrt{r}}{\sqrt{r}}$

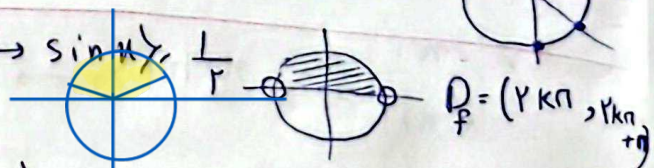
$\rightarrow \sin x \neq \frac{\sqrt{r}}{r} \rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{r}\}$

ب) $\frac{\cot x + 1}{\tan x + 1} \Rightarrow \tan x \neq -1$

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

سؤال ٦: $y = \sqrt{r \sin x - 1} \rightarrow r \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{r}$

$D_y = [2k\pi + \frac{\pi}{r}, 2k\pi + \frac{\pi}{r}]$



ب) $y = \sqrt{1 - r \cos x} \rightarrow 1 - r \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{r} \rightarrow D_f = [2k\pi - \pi, 2k\pi]$

$D_y = [2k\pi + \frac{\pi}{r}, 2k\pi + \frac{\pi}{r}]$

