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تکلیف سری در دنیادگی مکتب حضرت

الف) $\frac{\sin x - 2}{2 \cos x + 1} \rightarrow \cos x \neq -\frac{1}{2} \Rightarrow D_f = \mathbb{R} - \left\{ 2k\pi + \frac{2}{3}\pi, 2k\pi - \frac{2}{3}\pi \right\}$ (۲)

ب) $\frac{\sin x + 3}{\cos x - 1} \Rightarrow \cos x \neq 1 \Rightarrow D_f = \mathbb{R} - \{ 2k\pi \}$ ✓

الف) $\frac{2 \sin x + 1}{\tan x + 1} \rightarrow \tan x \neq -1 \Rightarrow D_f = \mathbb{R} - \left\{ 2k\pi + \frac{3\pi}{4}, 2k\pi - \frac{\pi}{4} \right\} \cup \left\{ k\pi + \frac{\pi}{2} \right\}$ (۱,۵)
 $\tan, \cot$ باید تعریف نباشد

ب) $\cot x + 1 \Rightarrow \bigoplus \Rightarrow D_f = \mathbb{R} - \left\{ 2k\pi + \frac{\pi}{4}, 2k\pi - \frac{5\pi}{4} \right\} \cup \{ k\pi \}$ ✓

الف) $-1 < x^2 - 2 < 1 \Rightarrow \frac{x^2}{3} > 1 \Rightarrow 1 < x^2 < 3 \Rightarrow D_f = [-\sqrt{3}, -1] \cup [1, \sqrt{3}]$ (۲) ✓

ب) $-1 < \sqrt{x} - 3 < 1 \Rightarrow +2 < \sqrt{x} < +4 \Rightarrow 4 < x < 16 \Rightarrow D_f = [4, 16]$ ✓

الف) $-1 < |x| - 3 < 1 \Rightarrow +2 < |x| < +4 \Rightarrow D_f = [2, 4] \cup [-4, -2]$ (۲) ✓

ب) $-1 < x^2 + 3x + 1 < 1 \Rightarrow x > -1 \cup x < -2 \Rightarrow D_f = [-3, 2] \cup [-1, 0]$ ✓
 $-3 < x < 0$

الف) $y = \log_3 x^{2-2} \Rightarrow x^{2-2} > 0 \Rightarrow x^2 > 2 \Rightarrow x > \sqrt{2} \Rightarrow D_f = (\sqrt{2}, +\infty)$ (۱,۵) ✓
 $x^2 > 2 \Rightarrow x > \sqrt{2} \cup x < -\sqrt{2}$

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

الف) $\begin{cases} 5 - x > 0 \\ x - 3 > 0 \\ x - 3 \neq 1 \end{cases} \Rightarrow \begin{cases} 5 > x \\ x > 3 \\ x \neq 4 \end{cases} \Rightarrow D_f = (3, 5) - \{4\}$ (۲) ✓

Parsian

$$(x-3)(x-1)$$

ب) $\begin{cases} x^2 - 1 > 0 \\ x + 3 > 0 \\ x + 3 \neq 1 \end{cases} \Rightarrow \begin{cases} x > 1 \\ x > -3 \\ x \neq -2 \end{cases} \Rightarrow D_f = (-3, -2) \cup (-2, -1) \cup (1, +\infty)$ 4

الف) $\log \frac{(x-3)(x-1)}{x-3} \Rightarrow \log(x-1) \Rightarrow x-1 > 0 \Rightarrow x > 1$ 7
 $D_f = (1, +\infty) - \{3\}$

ب) $\frac{x+3}{x-2} > 0 \Rightarrow x+3 > 0 \Rightarrow x > -3$ باید که راسی علامت نمی

$x+5 \Rightarrow x+5 > 0 \Rightarrow x > -5$ 1
 $D_f = (-5, -3) \cup (2, +\infty) - \{-2\}$
 $x \neq 2 \Rightarrow x=2 \Rightarrow$ 2

الف) $(x-2) > 0 \Rightarrow x > 2$ 1, 5
 $3 - \log \frac{x^2}{2} > 0 \Rightarrow \log \frac{x^2}{2} < 3 \Rightarrow x-2 < 2^3 \Rightarrow x < 10$ دست!!

ب) $x > 0$ و $2 \log \frac{x}{3} > \frac{1}{2} \Rightarrow \log \frac{x}{3} > \frac{1}{4} \Rightarrow x > 3^{\frac{1}{4}} \Rightarrow x > \sqrt[4]{3}$
 $D_f = (\sqrt[4]{3}, +\infty)$ ✓

$2^x + 1 \neq 0 \Rightarrow 2^x \neq -1 \Rightarrow D_f = \mathbb{R}$ 9
 $2^x - 1 \neq 0 \Rightarrow 2^x \neq 1 \Rightarrow x \neq 0 \Rightarrow D_f = \mathbb{R} - \{0\}$ 2
 $2^x - 2 \neq 0 \Rightarrow 2^x \neq 2 \Rightarrow x \neq 1$
 $D_f = \mathbb{R} - \{1\}$
 $2^x - 3 \neq 0 \Rightarrow 2^x \neq 3 \Rightarrow D_f = \mathbb{R} - \{\log_2 3\}$

$x \in W \Rightarrow x \geq 0$ و $\frac{x-1}{2}$ 10
 الف) $2x+1 \in W$ $D_f = \{x \mid x = \frac{k-1}{2}, k \in W\}$ 3

ب) $\frac{3x-2}{2x-5} \in W \Rightarrow 3x-2 = 2xW - 5W$
 $3x-2xW = 2-5W \Rightarrow x = \frac{2-5W}{3-2W}$

$D_f = \{x \mid x = \frac{2-5k}{3-2k}, k \in W\}$
 Parsian