نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

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الف) $2-x \geq 0 \Rightarrow 2 \geq x \Rightarrow D_f = 2 \geq x \geq -14 \Rightarrow [-14, 2]$

$4 - \sqrt{2-x} \geq 0 \Rightarrow 4 \geq \sqrt{2-x} \Rightarrow x \geq -14$

ب) $x-2 \geq 0 \Rightarrow x \geq 2 \longrightarrow D_f = 2 \leq x \leq 11 \Rightarrow [2, 11]$

$3 - \sqrt{x-2} \geq 0 \Rightarrow 3 \geq \sqrt{x-2} \Rightarrow 11 \geq x$

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الف) $4 - 2x^2 \geq 0 \Rightarrow 4 \geq 2x^2 \Rightarrow 2 \geq x^2 \Rightarrow x \leq \sqrt{2}, x \geq -\sqrt{2}$

$\Rightarrow D_f = -\sqrt{2} \leq x \leq \sqrt{2} \Rightarrow [-\sqrt{2}, \sqrt{2}]$

ب) $4|x| - 9 \geq 0 \Rightarrow 4|x| \geq 9 \Rightarrow |x| \geq \frac{9}{4} \Rightarrow x \geq \frac{3}{2}, x \leq -\frac{3}{2}$

$\Rightarrow D_f = [\frac{3}{2}, +\infty) \cup (-\infty, -\frac{3}{2}]$

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الف) $|x| - 3 \neq 0 \Rightarrow |x| \neq 3 \Rightarrow x \neq 3, -3$

$\Rightarrow D_f = R - \{3, -3\}$

ب) $x \geq 0$ $\quad x \geq 0 \cap R - \{9\} \Rightarrow D_f = [0, +\infty) - \{9\}$

$\sqrt{x} - 3 \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9$

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الف) $3 - |x| \geq 0 \Rightarrow 3 \geq |x| \Rightarrow 3 \geq x \geq -3$ (عبارت همیشه مثبت است)

$\Rightarrow D_f = [-3, 3]$

ب) $4 - x^2 \geq 0 \Rightarrow 4 \geq x^2 \Rightarrow 2 \geq x \geq -2$

$|x| - 1 \neq 0 \Rightarrow |x| \neq 1 \Rightarrow x \neq 1, -1$

$\Rightarrow D_f = [-2, 2] - \{-1, 1\}$

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الف) $x + |x| > 0 \Rightarrow x > -|x|$ (همیشه منفی) $\Rightarrow D_f = R^+ = (0, +\infty)$

ب) $x|x| > 0 \Rightarrow x > 0 \Rightarrow D_f = R^+ = (0, +\infty)$

(x مثبت یا منفی | |x| مثبت)

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ب) $4\sin x - 1 > 0 \Rightarrow 4\sin x > 1 \Rightarrow \sin x > \frac{1}{4}$

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

ج) $1 - 2\cos x > 0 \Rightarrow 1 > 2\cos x \Rightarrow \frac{1}{2} > \cos x$

$\Rightarrow D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3}\right]$

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ب) $2\sin^2 x - 1 \neq 0 \Rightarrow 2\sin^2 x \neq 1 \Rightarrow \sin^2 x \neq \frac{1}{2} \Rightarrow \sin x \neq \pm\frac{\sqrt{2}}{2}$

$\Rightarrow D_f = R - \left\{\frac{k\pi}{2} + \frac{\pi}{4}\right\}$

ج) $\frac{\cot x + 1}{\tan x + 1} = \frac{\frac{\cos}{\sin} + 1}{\frac{\sin}{\cos} + 1} \longrightarrow \sin x \neq 0$ ، $\tan x \neq -1$ ، $\cos x \neq 0$

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

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ب) $x - \frac{1}{2} = \alpha \longrightarrow \begin{cases} \alpha \notin Z & [\alpha] + [-\alpha] = -1 \\ \alpha \in Z & [\alpha] + [-\alpha] = 0 \end{cases}$ $\Rightarrow x - \frac{1}{2} \in Z \Rightarrow D_f = \{x / x \neq k + \frac{1}{2}, k \in Z\}$

ج) $[x - \frac{1}{2}] + [-x + \frac{1}{2}] > 0 \Rightarrow [x - \frac{1}{2}] + [-(x - \frac{1}{2})] > 0$

$\Rightarrow 2[x + \frac{1}{2}] > 1 \Rightarrow [x + \frac{1}{2}] > \frac{1}{2} \Rightarrow x > \frac{1}{2}$ ، $D_f = [\frac{1}{2}, +\infty)$

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ب) $[x - \frac{1}{2}] + [x + \frac{1}{2}] > 0 \Rightarrow [x - \frac{1}{2} + 1] + [x + \frac{1}{2}] > 1$

ج) $-x[x] > 0$

$\Rightarrow D_f = \emptyset$

∴ المجال هو $\emptyset$

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ب) $x[x] \neq 0 \Rightarrow x \neq 0$ ، $x \neq [0,1) \Rightarrow D_f = (-\infty, 0) \cup (1, \infty) - [0,1)$

ج) $4 - [x] > 0 \Rightarrow [x] < 4$

$\Rightarrow D_f = (-\infty, 4)$

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ب) $2 - [x] > 0 \Rightarrow 2 > [x] \Rightarrow x < 2$ $D_f = (-\infty, 2)$