

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۲ کلاس: ^۱ _۱

الف) $2 - x \geq 0 \Rightarrow x \leq 2$ $x - \sqrt{2-x} \geq 0 \Rightarrow x \geq -1$ $D_f = [-1, 2]$

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ب) $x - 2 \geq 0 \Rightarrow x \geq 2$ $3 - \sqrt{x-2} \geq 0 \Rightarrow \sqrt{x-2} \leq 3 \Rightarrow x-2 \leq 9 \Rightarrow x \leq 11$

$D_f = [2, 11]$

الف) $4 - 2x' \geq 0 \Rightarrow 4 \geq 2x' \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$

ب) $3|x| - 9 \geq 0 \Rightarrow |x| \geq 3 \Rightarrow \begin{matrix} x \geq 3 \\ x \leq -3 \end{matrix}$ $D_f = (-\infty, -3] \cup [3, +\infty)$

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الف) $|x| - 2 \neq 0 \Rightarrow |x| \neq 2 \Rightarrow x \neq \pm 2$ $D_f = \mathbb{R} - \{+2, -2\}$

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ب) $x \geq 0, \sqrt{x-2} \neq 0 \Rightarrow \sqrt{x} \neq 2 \Rightarrow x \neq 4$ $D_f = [0, +\infty) - \{4\}$

الف) $3 - |x| \geq 0 \Rightarrow 3 \geq |x| \Rightarrow -3 \leq x \leq 3$ $|x| + 2 \neq 0 \Rightarrow |x| \neq -2$

$D_f = [-3, 3]$

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ب) $4 - x^2 \geq 0 \Rightarrow 4 \geq x^2 \Rightarrow -2 \leq x \leq 2$ $|x| - 1 \neq 0 \Rightarrow |x| \neq 1$

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

الف) $x - |x| > 0 \Rightarrow x \geq |x| \Rightarrow D_f = \mathbb{R}^+$

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ب) $|x| > 0 \Rightarrow D_f = \mathbb{R}^+$

$$a) 1 - [x] \geq 0 \Rightarrow x \geq [x] \quad D_f = (-\infty, 1)$$

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$$b) 1 - [x] > 0 \Rightarrow 1 > [x] \quad D_f = (-\infty, 1)$$

$$a) x[x] > 0$$

$$D_f = \mathbb{R} - \{0\}$$

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$$b) -x[x] > 0$$

$$D_f = \emptyset$$

$$a) [x - \frac{1}{e}] + [x + \frac{1}{e}] \geq 0 \Rightarrow [x + \frac{1}{e}] - 1 + [x + \frac{1}{e}] \geq 0$$

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

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$$b) [x - \frac{1}{e}] + [-x + \frac{1}{e}] \geq 0 \Rightarrow [x - \frac{1}{e}] + [x + \frac{1}{e}] \geq 0 \Rightarrow D_f = \mathbb{R}$$

0, 1, \infty

1, 2, \infty

$$a) 1 - \sin^2 x \geq 0 \Rightarrow \sin^2 x \leq 1$$

$$D_f = [k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2}]$$

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$$b) \frac{\cos x}{\sin x} + 1$$

$$\sin x \neq 0$$

$$\frac{\sin x}{\cos x} + 1$$

$$\frac{\sin x}{\cos x} + 1 \neq 0 \Rightarrow \frac{\sin x}{\cos x} \neq -1 \Rightarrow \sin x \neq -\cos x$$

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

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$$a) 1 - \sin x \geq 0 \Rightarrow \sin x \leq 1$$

$$D_f = [k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2}]$$

1, \infty

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$$b) 1 - 2\cos x \geq 0 \Rightarrow \cos x \leq \frac{1}{2}$$

$$D_f = [k\pi - \frac{\pi}{3}, k\pi + \frac{\pi}{3}]$$

0, 1, \infty