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الف) $\begin{cases} 2x \geq 0 \\ x \geq 2 \end{cases} \rightarrow D_f = \{2, 3\}$ $\begin{cases} 4 \geq \sqrt{2-x} \\ 4 \geq \sqrt{2-x} \\ 16 \geq 2-x \\ 14 \geq -x \end{cases} \rightarrow -14 \leq x$	ب) $\begin{cases} x-2 \geq 0 \\ x \geq 2 \end{cases} \rightarrow D_f = \{2, 3\}$ $\begin{cases} 3 \geq \sqrt{x-2} \\ 9 \geq x-2 \\ 11 \geq x \end{cases}$	۲
الف) $\begin{cases} 4-2x^2 \geq 0 \\ 4 \geq 2x^2 \\ 2 \geq x^2 \\ \sqrt{2} \geq x \\ -\sqrt{2} \leq x \leq \sqrt{2} \end{cases}$ $D_f = [-\sqrt{2}, \sqrt{2}]$	ب) $\begin{cases} 3 x-9 \geq 0 \\ 3 x \geq 9 \\ x \geq 3 \\ x \geq 3, x \leq -3 \end{cases} \rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$	۱۵
الف) $\begin{cases} x +1 \geq 0 \\ x \geq -1 \end{cases} \rightarrow \text{همواره درست}$ $\begin{cases} x -3 \leq 0 \\ x \leq 3 \\ x \leq 3, x \geq -3 \end{cases} \rightarrow D_f = \mathbb{R} - \{3\}$	ب) $\begin{cases} \sqrt{x+1} \geq 0 \\ \sqrt{x} \geq -1 \end{cases} \rightarrow \text{همواره درست}$ $\begin{cases} \sqrt{x}-3 \leq 0 \\ \sqrt{x} \leq 3 \\ \sqrt{x} \neq 3 \\ \sqrt{x} \neq 9 \end{cases} \rightarrow D_f = \mathbb{R} - \{9\}$	۱۵
الف) $\begin{cases} 3- x \geq 0 \\ 3 \geq x \\ -3 \leq x \leq 3 \end{cases} \rightarrow D_f = \{-3, 3\}$ $\begin{cases} x +2 \leq 0 \\ x \leq -2 \end{cases} \rightarrow \text{همواره درست}$	ب) $\begin{cases} 4-x^2 \geq 0 \\ 4 \geq x^2 \\ 2 \geq x \\ -2 \leq x \leq 2 \end{cases} \rightarrow D_f = \{x x \in \mathbb{R} - \{0\}, x \leq 2\}$ $D_f = [-2, 2] - \{0\}$	۱۵
الف) $\begin{cases} x+1 \geq 0 \\ x \geq -1 \end{cases}$ $\begin{cases} x+ x \geq 0 \\ x \geq -x \end{cases}$ $D_f = \mathbb{R}^+$	ب) $x x \geq 0$ $D_f = \mathbb{R}^+ \cup \{0\}$ مفرد میزنند $\begin{matrix} 0 & \rightarrow \checkmark \\ - & \rightarrow \times \\ + & \rightarrow \checkmark \end{matrix}$	۱۵

ا) $x \in \{x\} \geq 0$ $x \geq \{x\}$ $[n] \leq 2$ $x > x$ $[x < 2]$ $D_f = (-\infty, 2)$	ب) $x \in \{x\} \geq 0$ $x \geq \{x\}$ $[n] < 2$ $x > x$ $[x < 2]$ $D_f = (\infty, 13]$	6
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ا) $x \in \{x\} \geq 0$ $+ \rightarrow \checkmark$ $x[n] = 0$ $- \rightarrow \checkmark$ $[n] = 0$ $x = [0, \infty)$ $0 \rightarrow \infty$ $D_f = k - [0, \infty)$ $D_f = \mathbb{R} \setminus \{0\}$	ب) $-x \in \{x\} \geq 0$ $+ \rightarrow \alpha$ $- \rightarrow \alpha$ $0 \rightarrow \alpha$ $D_f = \emptyset$	7
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ا) $\{x - \frac{1}{n} + 1\} + \{x + \frac{1}{n}\} \geq 0$ $x \{x + \frac{1}{n}\} \geq 0$ $x \{x + \frac{1}{n}\} \geq 1$ $x + \frac{1}{n} \geq 1$ $n \geq \frac{1}{x}$ $x + \frac{1}{n} \geq \frac{1}{x}$ $D_f = [\frac{1}{x}, +\infty)$ $x \geq \frac{1}{x} - \frac{1}{n} = \frac{1}{x}$ $D_f = [-\frac{1}{x}, +\infty)$	ب) $y = \sqrt{x - \frac{1}{n}} + \{-(x - \frac{1}{n})\}$ $\begin{cases} x \in \mathbb{Z} \rightarrow \{x\} \cdot \{x\} = 0 \\ x \notin \mathbb{Z} \rightarrow \{x\} + \{-x\} = -1 \end{cases}$ $\rightarrow x - \frac{1}{n} \in \mathbb{Z}$ $x \in \frac{1}{n} + \mathbb{Z}$ $D_f = \{x/x \in k + \frac{1}{n} \mid k \in \mathbb{Z}\}$	8
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ا) $x \sin^2 x \neq 0$ $x \sin^2 x \neq 1$ $\sin^2 x \neq \frac{1}{x}$ $\sin x \neq \pm \frac{\sqrt{x}}{x}$ $\sin x \neq \frac{\sqrt{x}}{x}$ $x \neq \infty, 1, \infty$ $(\frac{k\pi}{x} - \frac{a}{x})$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{x}, k\pi + \frac{\pi}{x}\}$	ب) $\tan x \neq 1$ $\tan x \neq -1$ $x \neq 135^\circ, 315^\circ$ $D_f = \mathbb{R} - \{k\pi - \frac{\pi}{x}\}$ $D_f = \mathbb{R} - \{k\pi, k\pi - \frac{\pi}{x}\}$	9
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ا) $x \sin x \geq 0$ $x \sin x \geq 1$ $\sin x \geq \frac{1}{x}$ $\rightarrow$ از صحت $\frac{1}{x}$ $x \in [k\pi - \frac{2\pi}{x}, k\pi + \frac{\pi}{x}]$ $D_f = [k\pi - \frac{2\pi}{x}, k\pi + \frac{\pi}{x}]$ $D_f = [2ka + \frac{\pi}{x}, 2ka + \frac{2\pi}{x}]$	ب) $x \cos x \geq 0$ $x \cos x \geq 1$ $\cos x \geq \frac{1}{x}$ $\rightarrow$ از صحت $\frac{1}{x}$ $x \in [k\pi - \frac{\pi}{x}, k\pi + \frac{\pi}{x}]$ $D_f = [k\pi - \frac{\pi}{x}, k\pi + \frac{\pi}{x}]$ $D_f = [2ka + \frac{\pi}{x}, 2ka + \frac{2\pi}{x}]$	10
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