

الف) $\begin{cases} x \geq 2 \\ x^2 - 4 \geq 0 \end{cases} \rightarrow D_f = \{2, 4\}$	ب) $\begin{cases} x \geq 2 \\ x^2 - 4 \geq 0 \end{cases} \rightarrow D_f = \{2, 4\}$	1
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الف) $2 \cdot \{x\} \geq 0$ $2 \geq \{x\}$ $2 > x$ $D_f = (-\infty, 2)$	ب) $2 \cdot \{x\} > 0$ $2 > \{x\}$ $1 > x$ $D_f = (\infty, 1]$	6
الف) $x \cdot \{x\} > 0$ $+$ $\rightarrow \checkmark$ $-$ $\rightarrow \checkmark$ 0 $\rightarrow \infty$ $D_f = \mathbb{R} - \{0\}$	ب) $-x \cdot \{x\} > 0$ $+$ $\rightarrow \alpha$ $-$ $\rightarrow \alpha$ 0 $\rightarrow \alpha$ $D_f = \emptyset$	7
الف) $\left\{x - \frac{1}{x} + 1\right\} + \left\{x + \frac{1}{x}\right\} \geq 0$ $2 \left\{x + \frac{1}{x}\right\} - 1 \geq 0$ $2 \left\{x + \frac{1}{x}\right\} \geq 1$ $x + \frac{1}{x} \geq \frac{1}{2}$ $x \geq \frac{1}{2} - \frac{1}{x} = -\frac{1}{x}$ $D_f = \left[-\frac{1}{x}, +\infty\right)$	ب) $y = \sqrt{x - \frac{1}{x}} + \left\{ -\left(x - \frac{1}{x}\right) \right\}$ $\begin{cases} x \in \mathbb{Z} \rightarrow \{x\} \cdot \{x\} = 0 \\ x \notin \mathbb{Z} \rightarrow \{x\} + \{-x\} = -1 \end{cases}$ $\rightarrow x - \frac{1}{x} \in \mathbb{Z}$ $x \in \frac{1}{x} + \mathbb{Z}$ $D_f = \left\{ x / x \in k + \frac{1}{x} \text{ و } k \in \mathbb{Z} \right\}$	
الف) $2 \sin^2 x \neq 0$ $2 \sin^2 x \neq 1$ $\sin^2 x \neq \frac{1}{2}$ $\sin x \neq \frac{\sqrt{2}}{2}$ $x \neq \in 45^\circ, 135^\circ$ $D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4} \right\}$	ب) $\tan x \neq 1$ $\tan x \neq -1$ $x \neq 45^\circ, 135^\circ$ $D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4} \right\}$	9
الف) $2 \sin x \cdot 1 \geq 0$ $2 \sin x \geq 1$ $\sin x \geq \frac{1}{2}$ $2k\pi + \frac{\pi}{6} \leq x \leq 2k\pi + \frac{5\pi}{6}$ $D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$	ب) $1 - 2 \cos x \geq 0$ $1 \geq 2 \cos x$ $\frac{1}{2} \geq \cos x$ $2k\pi + \frac{\pi}{3} \leq x \leq 2k\pi + \frac{5\pi}{3}$ $D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$	10