

الف) $2-x \geq 0$ $x \leq 2$ (I) $4-\sqrt{2-x} \geq 0$ $\sqrt{2-x} \leq 2$ $2-x \leq 14$ $x \geq -12$ (II) ب) $x-2 \geq 0$ $x \geq 2$ (I) $3-\sqrt{x-2} \geq 0$ $\sqrt{x-2} \leq 3$ $x-2 \leq 9$ $x \leq 11$ (II)	$D_f = (I) \cap (II) = -12 \leq x \leq 2$ $D_f = [-12, 2]$ $D_f = (I) \cap (II) = 2 \leq x \leq 11$ $D_f = [2, 11]$	1
الف) $4-2x^2 \geq 0$ $2x^2 \leq 4$ $x^2 \leq 2$ $\begin{cases} x \leq \sqrt{2} \\ x \geq -\sqrt{2} \end{cases}$ ب) $3 x -9 \geq 0$ $3 x \geq 9$ $ x \geq 3$ $\begin{cases} x \geq 3 \\ x \leq -3 \end{cases}$	$D_f = -\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [\sqrt{2}, \sqrt{2}]$ $D_f = (-\infty, -3] \cup [3, +\infty)$	2
الف) $ x \neq 3$ $x \neq \pm 3$ ب) $x \geq 0$ $\sqrt{x} \neq 3$ $x \neq 9$	$D_f = \mathbb{R} - \{-3, +3\}$ $D_f = [0, +\infty) - \{9\}$	3
الف) $3- x \geq 0$ $ x \leq 3$ $\begin{cases} x \leq 3 \\ x \geq -3 \end{cases}$ $ x \neq -2$ ب) $4-x^2 \geq 0$ $x^2 \leq 4$ $\begin{cases} x \leq 2 \\ x \geq -2 \end{cases}$ $ x \neq 1$ $x \neq \pm 1$	$D_f = [-3, 3]$ $D_f = [-2, 2] - \{-1, 1\}$	4
الف) $x+ x > 0$ ب) $x x > 0$	$D_f = (0, +\infty) = \mathbb{R}^+$ $D_f = (0, +\infty) = \mathbb{R}^+$	5

الف) $2 - [x] > 0 \quad [x] \leq 2 \quad Df = (-\infty, 2)$ ب) $2 - [x] > 0 \quad [x] < 2 \quad Df = (-\infty, 2)$	٦
الف) $x[x] > 0 \quad Df = \mathbb{R} - [0, 1)$ ب) $-x[x] > 0$ $x[x] < 0 \quad Df = \mathbb{Q}$	٧
الف) $[x - \frac{1}{p}] + [x + \frac{p}{p}] \geq 0 \quad [x - \frac{1}{p} + 1] + [x + \frac{p}{p}] \geq 1$ $[x + \frac{p}{p}] + [x + \frac{p}{p}] \geq 1 \quad 2[x + \frac{p}{p}] \geq 1 \quad [x + \frac{p}{p}] \geq \frac{1}{2}$ $Df = [\frac{1}{2}, +\infty)$ ب) $[x - \frac{1}{p}] + [-(x - \frac{1}{p})] = \xrightarrow{x - \frac{1}{p} = a} \begin{cases} a \in \mathbb{Z} & [a] + [-a] = 0 \\ a \notin \mathbb{Z} & [a] + [-a] = -1 \end{cases} \Rightarrow x - \frac{1}{p} \in \mathbb{Z}$ $Df = \{x \mid x = k + \frac{1}{p}, k \in \mathbb{Z}\}$	٨
الف) $2 \sin^2 x - 1 \neq 0 \quad \sin^2 x \neq \frac{1}{2} \quad \sin x \neq \pm \frac{\sqrt{2}}{2} \quad \begin{cases} Df = \mathbb{R} - \{-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\} \\ Df = \mathbb{R} - \{k\frac{\pi}{2} + \frac{\pi}{4}\} \end{cases}$ ب) $\frac{\cos x}{\sin x} \neq \cot x \quad \sin x \neq 0 \quad x \neq k\pi$ $\tan x + 1 \neq 0 \quad \tan x \neq -1 \quad x \neq k\pi - \frac{\pi}{4}$ $Df = \mathbb{R} - \{k\pi, k\pi - \frac{\pi}{4}\}$	٩
الف) $2 \sin x - 1 \geq 0 \quad 2 \sin x \geq 1 \quad \sin x \geq \frac{1}{2}$ $Df = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$ ب) $1 - 2 \cos x \geq 0 \quad 2 \cos x \leq 1 \quad \cos x \leq \frac{1}{2}$ $Df = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$	١٠