

الف) $2-x \geq 0 \rightarrow x \leq 2$ $D_f = [-14, 2]$ 11, 28 (2-1)

$4 - \sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 4 \rightarrow 2-x \leq 16 \rightarrow x \geq -14$

ب) $x-2 \geq 0 \rightarrow x \geq 2$ $D_f = [2, 11]$

$3 - \sqrt{x-2} \geq 0 \rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$ (2-2)

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

ب) $3|x|-9 \geq 0 \rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow x \geq 3$
 $x \leq -3$

$D_f = (-\infty, -3] \cup [3, +\infty)$ (2-3)

الف) $|x| \neq 3 \rightarrow x \neq \pm 3$ $D_f = \mathbb{R} - \{\pm 3\}$

ب) $x \geq 0 \wedge \sqrt{x} \neq 3 \rightarrow x \neq 9$ $D_f = [0, +\infty) - \{9\}$

الف) $3-|x| \geq 0 \rightarrow |x| \leq 3 \rightarrow -3 \leq x \leq 3$ $D_f = [-3, 3]$

ب) $|x|+2 \neq 0 \rightarrow |x| \neq -2 \checkmark$

ب) $|x|-1 \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1$ $D_f = [-2, 2] - \{\pm 1\}$

$4-x^2 \geq 0 \rightarrow -(x-2)(x+2) \geq 0$

الف)

$D_f = (0, +\infty)$

$x+|x| \geq 0 \rightarrow -x < |x| \rightarrow \mathbb{R}^+$

ب)

$D_f = (0, +\infty)$

$x|x| \geq 0 \rightarrow \mathbb{R}^+$

الناسبي

الف) $2 - [x] \geq 0 \rightarrow [x] \leq 2 \quad D_f = (-\infty, 3)$

(2) - 4

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

الف) $x[x] \neq 0 \quad D_f = \mathbb{R} - [0, 1)$

(2) - 4

ب) $-x[x] > 0 \rightarrow D_f = \emptyset$

الف) $2[x + \frac{1}{x}] \geq 1 \rightarrow [x + \frac{1}{x}] \geq \frac{1}{2} \rightarrow x + \frac{1}{x} \geq 1$
 $[x - \frac{1}{x} + \frac{1}{x}] \quad D_f = [\frac{1}{2}, +\infty) \quad x \geq \frac{1}{2}$

(2) - 1

ب) $[x - \frac{1}{x}] + [- (x - \frac{1}{x})] \geq 0 \rightarrow x - \frac{1}{x} \in \mathbb{Z}$
 $x \in \mathbb{Z} + \frac{1}{x}$

$D_f = \{x \mid x = k + \frac{1}{x}, k \in \mathbb{Z}\}$

(2) - 4

الف) $2 \sin^2 x \neq 1 \rightarrow \sin^2 x \neq \frac{1}{2} \rightarrow \sin x \neq \pm \frac{1}{\sqrt{2}} \quad D_f = \mathbb{R}$
 $\sin x \neq \pm \frac{\sqrt{2}}{2} \quad D_g = \mathbb{R} - \{ \frac{k\pi}{4} + \frac{\pi}{4} \}$

ب) $\cos x \neq 0 \quad \tan x \neq -1 \rightarrow D_f = \mathbb{R} - \{ k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \}$
 $\sin x \neq 0$

(1) - 1

الف) $2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2} \quad D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $1 - 2 \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2} \quad D_f = [2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3}]$

ج) $D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$