

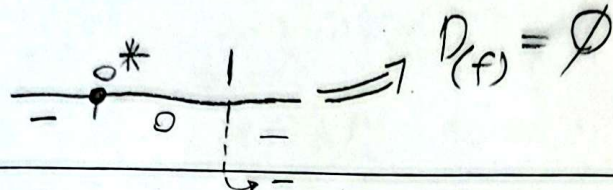
① $2-x \geq 0 \Rightarrow x \leq 2$ ② $2-\sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 2 \Rightarrow 2-x \leq 4 \Rightarrow x \geq -1$ ① $x-2 \geq 0 \Rightarrow x \geq 2$ ② $3-\sqrt{x-2} \geq 0 \Rightarrow x-2 \leq 9 \Rightarrow x \leq 11$ (الف) $\left. \begin{matrix} ① \\ ② \end{matrix} \right\} \rightarrow D_{(f)} = [-1, 2]$ (ب) $\left. \begin{matrix} ① \\ ② \end{matrix} \right\} \rightarrow D_{(f)} = [2, 11]$	
$4-2x^2 \geq 0 \Rightarrow 4 \geq 2x^2 \Rightarrow 2 \geq x^2 \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$ $3 x -9 \geq 0 \Rightarrow 3 x \geq 9 \Rightarrow x \geq 3 \Rightarrow x \geq 3 \text{ or } x \leq -3$ (الف) $D_{(f)} = [-\sqrt{2}, \sqrt{2}]$ (ب) $D_{(f)} = \mathbb{R} - [-3, 3]$	۲
$x -3 \neq 0 \Rightarrow x \neq 3 \Rightarrow x \neq \pm 3$ $\sqrt{x}-3 \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9$ (الف) $D_{(f)} = \mathbb{R} - \{\pm 3\}$ (ب) $D_{(f)} = \mathbb{R} - \{9\}$	۳
(الف) کسر تعریف شده است زیرا $x +2$ همیشه مثبت است $3- x \geq 0 \Rightarrow x \leq 3 \Rightarrow -3 \leq x \leq 3$ $x -1 \neq 0 \Rightarrow x \neq 1 \Rightarrow x \neq \pm 1$ $4-x^2 \geq 0 \Rightarrow 4 \geq x^2 \Rightarrow -2 \leq x \leq 2$ (الف) $D_{(f)} = [-3, 3]$ (ب) $D_{(f)} = [-2, 2] - \{\pm 1\}$	۴
$x+ x > 0 \Rightarrow x > -x \Rightarrow D_{(f)} = \mathbb{R}^+$ $x x > 0 \Rightarrow D_{(f)} = \mathbb{R}^+$ (الف) (ب)	۵

$$2 - |x| \geq 0 \Rightarrow 2 \geq |x| \Rightarrow D_{(f)} = (-\infty, 2] \quad (\text{الف})$$

$$2 - |x| > 0 \Rightarrow 2 > |x| \Rightarrow D_{(f)} = (-\infty, 2) \quad (\text{ب})$$

$$x|x| \neq 0 \Rightarrow D_{(f)} = \mathbb{R} - [0, 1) \quad (\text{الف})$$

$$-x[x] > 0 \quad (\text{ب})$$



$$\left[x - \frac{1}{3}\right] + \left[x + \frac{2}{3}\right] \geq 0 \rightarrow \left[x + \frac{2}{3} - 1\right] + \left[x + \frac{2}{3}\right] \geq 0 \Rightarrow \left[x + \frac{2}{3}\right] \geq \frac{1}{3} \Rightarrow x + \frac{2}{3} \geq 1 \Rightarrow x \geq \frac{1}{3} \Rightarrow D_{(f)} = \left[\frac{1}{3}, +\infty\right) \quad (\text{الف})$$

$$\left[x - \frac{1}{3}\right] + \left[-x + \frac{1}{3}\right] \geq 0 \xrightarrow{\text{شرط 1 رعایت شود}} \left[x - \frac{1}{3}\right] + \left[-\left(x - \frac{1}{3}\right)\right] \geq 0 \Rightarrow 0 \geq 0 \quad (\text{ب})$$

$$x - \frac{1}{3} \in \mathbb{Z} \Rightarrow D_{(f)} = \left\{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\right\}$$

$$2 \sin^2 x - 1 \neq 0 \Rightarrow \sin^2 x \neq \frac{1}{2} \Rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2} \quad (\text{الف})$$

tan و cot

$$D_{(f)} = \left\{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}\right\}$$

(ب) مخرج کسر اگر تعریف شده باشد همیشه مثبت است

$\tan x$ و $\cot x$ باید تعریف شده باشند $\Rightarrow D_{(f)} = \mathbb{R} - \left\{\frac{k\pi}{2}\right\}$

$$2 \sin x - 1 \geq 0 \Rightarrow \sin x \geq \frac{1}{2} \quad (\text{الف})$$

$$D_{(f)} = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}\right]$$

$$1 - 2 \cos x \geq 0 \Rightarrow \cos x \leq \frac{1}{2} \quad (\text{ب})$$

$$D_{(f)} = \mathbb{R} - \left(2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}\right)$$

