

الف) $y = \sqrt{4-x} \rightarrow 4-x \geq 0 \rightarrow x \leq 4, 4-\sqrt{4-x} \geq 0 \rightarrow 4-x \leq 4 \rightarrow x \geq 0 \Rightarrow 0 \leq x \leq 4, D = [0, 4]$

ب) $y = \sqrt{3-x} \rightarrow 3-x \geq 0 \rightarrow x \leq 3, 3-\sqrt{3-x} \geq 0 \rightarrow 3-x \leq 3 \rightarrow x \geq 0 \Rightarrow 0 \leq x \leq 3, D = [0, 3]$

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

ب) $y = \sqrt{3|x|-9} \rightarrow 3|x|-9 \geq 0 \rightarrow |x| \geq 3 \Rightarrow x \geq 3, x \leq -3, D = [3, +\infty) \cup (-\infty, -3]$

الف) $y = \sqrt{\frac{|x|+1}{|x|-3}} \rightarrow \frac{|x|+1}{|x|-3} \geq 0 \rightarrow |x|+1 \geq 0 \rightarrow x \neq \pm 3 \Rightarrow D = \mathbb{R} - \{\pm 3\}$

ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}} \rightarrow \frac{\sqrt{x}+1}{\sqrt{x}-3} \geq 0 \rightarrow \sqrt{x}+1 \geq 0 \rightarrow x \geq 0, \sqrt{x}-3 \neq 0 \rightarrow x \neq 9 \Rightarrow D = [0, 9) \cup (9, +\infty)$

الف) $\frac{\sqrt{3-|x|}}{|x|+2} \rightarrow \frac{3-|x|}{|x|+2} \geq 0 \rightarrow 3-|x| \geq 0 \rightarrow |x| \leq 3 \Rightarrow x \leq 3, x \geq -3, D = [-3, 3]$

ب) $\frac{\sqrt{4-x^2}}{|x|-1} \rightarrow \frac{4-x^2}{|x|-1} \geq 0 \rightarrow 4-x^2 \geq 0 \rightarrow x^2 \leq 4 \Rightarrow x \leq 2, x \geq -2, D = [-2, 2]$

الف) $y = \frac{x+1}{\sqrt{x+|x|}} \rightarrow \frac{x+1}{\sqrt{x+|x|}} \geq 0 \rightarrow x+1 \geq 0 \rightarrow x \geq -1, x+|x| \geq 0 \rightarrow x \geq 0 \Rightarrow D = [0, +\infty), x \geq 0$

ب) $y = \frac{1}{\sqrt{x|x|}} \rightarrow \frac{1}{\sqrt{x|x|}} \geq 0 \rightarrow x|x| > 0 \rightarrow x > 0 \Rightarrow D = (0, +\infty), x > 0$

الف) $y = \sqrt{2-[x]} \rightarrow 2-[x] \geq 0 \rightarrow [x] \leq 2 \Rightarrow x \leq 3, D = (-\infty, 3]$

ب) $y = \frac{1}{\sqrt{2-[x]}} \rightarrow 2-[x] > 0 \rightarrow [x] < 2 \Rightarrow x < 2, D = (-\infty, 2)$

الف) $y = \frac{1}{x[x]} \rightarrow x[x] \neq 0 \rightarrow x \neq 0, 1 \Rightarrow D = (-\infty, 0) \cup (1, +\infty)$

ب) $y = \frac{1}{\sqrt{-x[x]}} \rightarrow -x[x] > 0 \Rightarrow x[x] < 0 \Rightarrow D = \emptyset$

الف) $y = \sqrt{[x-\frac{1}{p}] + [x+\frac{p}{p}]} \rightarrow [x-\frac{1}{p}] + [x+\frac{p}{p}] \geq 0 \rightarrow [x-\frac{1}{p}+1] + [x+\frac{p}{p}] \geq 1 \Rightarrow [x+\frac{p}{p}] \geq 1 \Rightarrow x \geq \frac{1}{p}, D = [\frac{1}{p}, +\infty)$

ب) $y = \sqrt{[x-\frac{1}{p}] + [-x+\frac{1}{p}]} \rightarrow [x-\frac{1}{p}] + [-x+\frac{1}{p}] \geq 0 \rightarrow [x] + [-x] \geq 0 \rightarrow 0 \geq 0 \Rightarrow x \in \mathbb{Z} \Rightarrow D = \{x | x = k + \frac{1}{p}, k \in \mathbb{Z}\}$

الف) $y = \frac{1}{\sqrt{\sin^2 x - 1}} \rightarrow \sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq 1 \Rightarrow D = \mathbb{R} - \{k\pi + \frac{\pi}{2}, k \in \mathbb{Z}\}$

ب) $y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \sin x, \cos x \neq 0, \tan x \neq -1 \Rightarrow D = \mathbb{R} - \{k\pi + \frac{3\pi}{4}, k \in \mathbb{Z}\}$

الف) $y = \sqrt{2\sin x - 1} \rightarrow 2\sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2} \Rightarrow D = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $y = \sqrt{1-2\cos x} \rightarrow 1-2\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2} \Rightarrow D = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$

