

الف) $y = \sqrt{4 - \sqrt{2-x}} \Rightarrow 2-x \geq 0 \rightarrow x \leq 2$ $4 - \sqrt{2-x} \geq 0 \rightarrow \sqrt{2-x} \leq 4 \rightarrow 2-x \leq 16 \rightarrow x \geq -14$ $D_f = [-14, 2]$ ب) $y = \sqrt{3 - \sqrt{x-2}} \Rightarrow x-2 \geq 0 \rightarrow x \geq 2$ $3 - \sqrt{x-2} \geq 0 \rightarrow \sqrt{x-2} \leq 3 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$ $D_f = [2, 11]$	۱
الف) $y = \sqrt{4-2x^2} \Rightarrow 4-2x^2 \geq 0 \rightarrow 2x^2 \leq 4 \rightarrow x^2 \leq 2 \rightarrow x \leq \pm\sqrt{2}$ $D_f = (-\infty, -\sqrt{2}] \cup [\sqrt{2}, +\infty)$ ب) $y = \sqrt{3 x +9} \Rightarrow 3 x +9 \geq 0 \rightarrow x \geq -3 \rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$	۲
الف) $y = \sqrt[3]{\frac{ x +1}{ x -3}} \Rightarrow \frac{ x +1}{ x -3} \Rightarrow x -3 \neq 0 \rightarrow x \neq 3$ $\downarrow$ $x \neq \pm 3$ $D_f = \mathbb{R} - \{-3, 3\}$ ب) $y = \sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}} \Rightarrow \frac{\sqrt{x}+1}{\sqrt{x}-3} \Rightarrow x \geq 0$ $\sqrt{x}-3 \neq 0 \rightarrow x \neq 9$ $D_f = [0, +\infty) - \{9\}$	۳
الف) $y = \frac{\sqrt{3- x }}{ x +2} \Rightarrow 3- x \geq 0 \rightarrow x \leq 3 \rightarrow x \leq 3, x \geq -3$ $x +2 \neq 0 \rightarrow x \neq -2 \rightarrow x = 1R \rightarrow D_f = [-3, 3]$ ب) $y = \frac{\sqrt{4-x^2}}{ x -1} \Rightarrow 4-x^2 \geq 0 \rightarrow x^2 \leq 4 \rightarrow x \leq 2, x \geq -2$ $x -1 \neq 0 \rightarrow x \neq 1 \rightarrow x \neq 1, -1 \rightarrow D_f = [-2, 2] - \{1, -1\}$	۴
الف) $y = \frac{x+1}{\sqrt{x+ x }} \Rightarrow x+ x > 0 \rightarrow x \neq -x \rightarrow x > 0$ $D_f = (0, +\infty)$ ب) $y = \frac{1}{\sqrt{x x }} \Rightarrow x x > 0 \rightarrow x > 0$ $D_f = (0, +\infty)$	۵

$y = \sqrt{2-x} \Rightarrow 2-x \geq 0 \rightarrow [x] \leq 2 \rightarrow x < 3$ $D_f = (-\infty, 3)$	(أ)	
$y = \frac{1}{\sqrt{2-x}} \Rightarrow 2-x > 0 \rightarrow [x] < 2 \rightarrow x < 2$ $D_f = (-\infty, 2)$	(ب)	
$y = \frac{1}{x[x]} \Rightarrow x[x] \neq 0 \rightarrow [x] \neq 0 \rightarrow x \neq 0 \rightarrow D_f = \mathbb{R} - [0, 1)$	(أ)	
$y = \frac{1}{\sqrt{-x[x]}} \Rightarrow -x[x] \geq 0 \rightarrow D_f = \emptyset$	(ب)	
$y = \sqrt{[x-\frac{1}{x}] + [x+\frac{x}{x}]} \Rightarrow [x-\frac{1}{x}] + [x+\frac{x}{x}] \geq 0 \rightarrow [x+\frac{x}{x}-1] + [x+\frac{x}{x}] \geq 0 \rightarrow 2[x+\frac{x}{x}] - 1 \geq 0$ $\rightarrow [x+\frac{x}{x}] \geq \frac{1}{2} \rightarrow x+\frac{x}{x} \geq 1 \rightarrow x \geq \frac{1}{x} \rightarrow D_f = [\frac{1}{x}, +\infty)$	(أ)	
$y = \sqrt{[x-\frac{1}{x}] + [\frac{1}{x}-x]} \Rightarrow [x-\frac{1}{x}] + [\frac{1}{x}-x] \geq 0 \rightarrow [x-\frac{1}{x}] + [-(x-\frac{1}{x})] \stackrel{a \in \mathbb{Z}}{\geq} [a] + [-a] = 0$ $\rightarrow x = z + \frac{1}{x} \rightarrow D_f = \{x / x = k + \frac{1}{x}, k \in \mathbb{Z}\}$	(ب)	$\Rightarrow x - \frac{1}{x} \in \mathbb{Z}$
$y = \frac{1}{\sqrt{2\sin^2 x - 1}} \Rightarrow 2\sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq \frac{1}{2} \rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2}$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$	(أ)	
$y = \frac{\cot x + 1}{\tan x + 1} \Rightarrow \tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \rightarrow x \neq 135^\circ, 315^\circ \rightarrow D_f = \mathbb{R} - \{2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$	(ب)	
$y = \sqrt{2\sin x - 1} \Rightarrow 2\sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2}$ $\rightarrow 30^\circ \leq x \leq 150^\circ \rightarrow D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$	(أ)	
$y = \sqrt{1-2\cos x} \Rightarrow 1-2\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$ $\rightarrow 120^\circ \leq x \leq 240^\circ \rightarrow D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$	(ب)	