

الف) $y = \sqrt{4 - \sqrt{2 - x}}$ $2 - x \geq 0 \rightarrow x \leq 2$ $4 - \sqrt{2 - x} \geq 0 \rightarrow 4 \geq \sqrt{2 - x} \rightarrow x \geq -14$ $\Rightarrow D_f = [-14, 2]$	ب) $y = \sqrt{3 - \sqrt{x - 2}}$ $x - 2 \geq 0 \rightarrow x \geq 2$ $3 - \sqrt{x - 2} \geq 0 \rightarrow 3 \geq \sqrt{x - 2}$ $\rightarrow x - 2 \leq 9 \rightarrow x \leq 11$ $D_f = [2, 11]$	۱
الف) $y = \sqrt{4 - 2x^2}$ $4 - 2x^2 \geq 0 \rightarrow 4 \geq 2x^2$ $\rightarrow 2 \geq x^2 \rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$	ب) $y = \sqrt{3 x - 9}$ $3 x - 9 \geq 0 \rightarrow x \geq 3$ $D_f = [-3, 3]$	۲
الف) $y = \sqrt[3]{\frac{ x + 1}{ x - 3}}$ $x - 3 \neq 0 \Rightarrow x \neq \pm 3$ $D_f = \mathbb{R} - \{\pm 3\}$	$y = \sqrt[3]{\frac{\sqrt{x} + 1}{\sqrt{x} - 3}}$ $\sqrt{x} - 3 \neq 0 \Rightarrow \sqrt{x} \neq 3$ $\Rightarrow x \neq 9$ $D_f = \mathbb{R} - \{9\}$	۳
الف) $y = \sqrt{\frac{3 - x }{ x + 2}}$ $x + 2 \neq 0 \rightarrow$ همیشه مثبت است $3 - x \geq 0 \rightarrow 3 \geq x$ $D_f = [-3, 3]$	ب) $y = \sqrt{\frac{4 - x^2}{ x - 1}}$ $x - 1 \neq 0 \Rightarrow x \neq 1 \Rightarrow x \neq \pm 1$ $\frac{-2}{-1} + \frac{-1}{1} = -\frac{1}{1} + \frac{1}{1} = 0$ $D_f = [-2, -1) \cup (1, 2]$	۴
الف) $y = \frac{x + 1}{\sqrt{x + x }}$ $x + x \geq 0$ $\oplus \checkmark$ $\odot \times$ $\ominus \times$ $D_f = (0, \infty)$	ب) $y = \frac{1}{\sqrt{x x }}$ $\oplus \checkmark$ $\odot \times$ $\ominus \times$ $D_f = (0, \infty)$	۵

الف) $y = \sqrt{2 - [x]}$

$2 - [x] \geq 0 \quad 2 \geq [x]$

$D_f = (-\infty, +3)$

ب) $y = \frac{1}{\sqrt{2 - [x]}}$

$2 - [x] > 0 \rightarrow 2 > [x]$

$D_f = (-\infty, +2)$

الف) $y = \frac{1}{x[x]}$

$x[x] \neq 0$

$D_f = \mathbb{R} - [0, 1)$

ب) $y = \frac{1}{\sqrt{-x[x]}}$

$-x[x] > 0 \rightarrow$ حقيقة مناس

$D_f = \emptyset$

الف) $y = \sqrt{[x - \frac{1}{r}] + [x + \frac{r}{r}]}$

$[x - \frac{1}{r}] + [x - \frac{1}{r} + 1] \geq 0$

$2[x - \frac{1}{r}] + 1 \geq 0 \Rightarrow [x - \frac{1}{r}] \geq -\frac{1}{2}$

$D_f = [\frac{1}{r}, \infty)$

ب) $y = \sqrt{[x - \frac{1}{r}] + [-x + \frac{r}{r}]}$

$a \in \mathbb{Z} \rightarrow [a] + [-a] = 0$

$a \notin \mathbb{Z} \rightarrow [a] + [-a] = -1$

$x - \frac{1}{r} \in \mathbb{Z} \Rightarrow D_f = \{x | x = m + \frac{1}{r}, m \in \mathbb{Z}\}$

الف) $y = \frac{1}{r \sin^2 x - 1}$

$r \sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq \frac{1}{r}$

$\rightarrow \sin x \neq \pm \frac{\sqrt{r}}{r}$

$D_f = \mathbb{R} - \left\{ \frac{K\pi}{r} + \frac{\pi}{r}, \frac{K\pi}{r} + \frac{3\pi}{r} \right\}$

ب) $y = \frac{\cot x + 1}{\tan x + 1}$

$\tan x \neq -1$

$D_f = \mathbb{R} - \left\{ K\pi - \frac{\pi}{4}, K\pi + \frac{3\pi}{4} \right\}$

الف) $y = \sqrt{r \sin x - 1}$

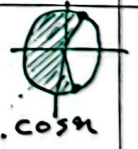
$r \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{r}$



$D_f = [2K\pi + \frac{\pi}{r}, 2K\pi + \frac{3\pi}{r}]$

ب) $y = \sqrt{1 - r \cos x}$

$1 - r \cos x \geq 0 \rightarrow \frac{1}{r} \geq \cos x$



$D_f = [2K\pi + \frac{\pi}{r}, 2K\pi + \frac{3\pi}{r}]$