

الف) $y = \sqrt{4 - \sqrt{2 - x}}$ $2 - x \geq 0$ $x \leq 2$ $\rightarrow D_f = [-1, 2]$ $4 - \sqrt{2 - x} \geq 0 \Rightarrow \sqrt{2 - x} \leq 4 \Rightarrow 2 - x \leq 16 \Rightarrow x \geq -14$ ب) $y = \sqrt[3]{2 - \sqrt{x - 2}}$ $x \geq 2$ $2 - \sqrt{x - 2} \geq 0 \Rightarrow \sqrt{x - 2} \leq 2 \Rightarrow x - 2 \leq 4 \Rightarrow x \leq 6$ $D_f = [2, 6]$	۱
الف) $y = \sqrt{4 - 2x^2}$ $4 - 2x^2 \geq 0$ $2x^2 \leq 4 \Rightarrow x^2 \leq 2 \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$ $D_f = [-\sqrt{2}, \sqrt{2}]$ ب) $y = \sqrt[3]{3 x - 9}$ $3 x - 9 \geq 0 \Rightarrow x \geq 3$ $x \geq 3$ $x \leq -3$ $D_f = (-\infty, -3] \cup [3, +\infty)$	۲
الف) $y = \sqrt[3]{\frac{x+1}{ x +3}}$ $\Rightarrow x \neq 3 \Rightarrow x \neq \pm 3$ $D_f = \mathbb{R} - \{+3, -3\}$ ب) $y = \sqrt[3]{\frac{\sqrt{x+1}}{\sqrt{x-3}}}$ $\Rightarrow x \geq 0$ $\sqrt{x-3} \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9$ $D_f = [0, +\infty) - \{9\}$	۳
الف) $y = \frac{\sqrt{3 - x }}{ x + 2}$ $3 - x \geq 0$ $x \leq 3$ $-3 \leq x \leq 3$ $x \neq -2$ $x \neq -3$ $D_f = [-3, 3]$ ب) $y = \frac{\sqrt{4 - x^2}}{ x - 1}$ $x \neq 1$ $x \neq \pm 1$ $4 - x^2 \geq 0$ $x^2 \leq 4 \Rightarrow -2 \leq x \leq 2$ $D_f = [-2, 2] - \{-1, 1\}$	۴
الف) $y = \frac{x+1}{\sqrt{x+ x }}$ $x+ x \geq 0$ $x > -x$ $D_f = \mathbb{R}^+ \cup (0, +\infty)$ ب) $y = \frac{1}{\sqrt{x x }}$ $\Rightarrow x x > 0$ $D_f = \mathbb{R}^+ \cup (0, +\infty)$	۵

الف) $y = \sqrt{r - [n]}$

$r - [n] \geq 0 \Rightarrow D_f = (-\infty, r)$
 $[n] \leq r$

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ب) $y = \frac{1}{\sqrt{r - [n]}}$

$r - [n] > 0 \Rightarrow [n] < r \Rightarrow D_f = (-\infty, r)$

الف) $y = \frac{1}{n[n]}$

$n[n] \neq 0$
 $n \neq 0$
 $[n] \neq 0 \Rightarrow D_f = \mathbb{R} - [0, 1)$

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ب) $y = \frac{1}{\sqrt{-n[n]}}$

$-n[n] > 0$
 $n[n] < 0 \Rightarrow D_f = \emptyset$

الف) $y = \sqrt{[n - \frac{1}{r}] + [n + \frac{r}{r}]} \Rightarrow [n - \frac{1}{r}] + [n + \frac{r}{r}] + 1 \geq 0$

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

$r[n + \frac{r}{r}] \geq 1 \Rightarrow$

$[n + \frac{r}{r}] \geq \frac{1}{r}$

$n + \frac{r}{r} \geq 1$

$n \geq \frac{1}{r}$

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

$n - \frac{1}{r} \in \mathbb{Z}$

$D_f = \{n/n = k+1, k \in \mathbb{Z}\}$

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

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الف) $y = \frac{1}{r \sin^2 x - 1}$

$\Rightarrow \sin^2 x \neq \frac{1}{r}$

$\sin x \neq \pm \frac{1}{\sqrt{r}}$

$D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{\sqrt{r}}\}$

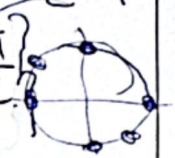


$\sin \neq 0$

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

$\cos \neq 0$
 $\tan \neq -1$

$D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{r}, k\pi - \frac{\pi}{r}\}$



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الف) $y = \sqrt{r \sin x - 1}$

$r \sin x - 1 \geq 0$

$\sin x \geq \frac{1}{r}$

$D_f = [r k\pi + \frac{\pi}{r}, r k\pi + \frac{5\pi}{r}]$



ب) $y = \sqrt{1 - r \cos x}$

$\cos x \leq \frac{1}{r}$

$D_f = [r k\pi + \frac{\pi}{r}, r k\pi - \frac{\pi}{r}]$

