

الف) $y = \sqrt{4-x} - \sqrt{x-2}$ $4-x \geq 0$ $x-2 \geq 0$ $4 \geq \sqrt{4-x}$ $\sqrt{x-2} \geq 0$ $14 \geq 4-x$ $x \geq -14$

ب) $\sqrt{4-x} - \sqrt{x-2} = y$

$D_f = [2, 11]$

$x-2 \geq 0$

$x \geq 2$

$4 - \sqrt{x-2} \geq 0$

$4 \geq \sqrt{x-2}$

$14 \geq x-2$

$11 \geq x$

$D_f = [-14, 2]$

الف) $y = \sqrt{4-2x^2}$

$4-2x^2 \geq 0$

$4 \geq 2x^2$

$2 \geq x^2$

$\sqrt{2} \geq x \geq -\sqrt{2}$

$D_f = [-\sqrt{2}, \sqrt{2}]$

ب) $y = \sqrt{4|x|-9}$

$4|x|-9 \geq 0$

$4|x| \geq 9$

$|x| \geq \frac{9}{4}$

$x \geq \frac{9}{4}$ or $x \leq -\frac{9}{4}$

$D_f = (-\infty, -\frac{9}{4}] \cup [\frac{9}{4}, \infty)$

الف) $y = \sqrt{\frac{|x|+1}{|x|-3}}$

$|x|-3 \neq 0$

$|x| \neq 3$

$x \neq 3$ or $x \neq -3$

$D_f = \mathbb{R} - \{3, -3\}$

ب) $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$

$\sqrt{x}-3 \neq 0$

$\sqrt{x} \neq 3$

$x \neq 9$

$D_f = [0, \infty) - \{9\}$

الف) $y = \frac{\sqrt{4-|x|}}{|x|+2}$

$4-|x| \geq 0$

$4 \geq |x|$

$-2 \leq x \leq 2$

$D_f = [-2, 2]$

ب) $y = \frac{\sqrt{4-x^2}}{|x|-1}$

$4-x^2 \geq 0$

$4 \geq x^2$

$-2 \leq x \leq 2$

$|x|-1 \neq 0$

$|x| \neq 1$

$x \neq -1$ or $x \neq 1$

$D_f = [-2, 2] - \{-1, 1\}$

الف) $y = \frac{x+1}{\sqrt{x+|x|}}$

$x+|x| > 0$

$|x| > -x$

$D_f = \mathbb{R}^+ = (0, \infty)$

ب) $y = \frac{1}{\sqrt{x|x|}}$

$x|x| > 0$

$x > 0$

$D_f = (0, \infty)$

الف) $y = \sqrt{2-[x]}$

$2-[x] \geq 0$

$2 \geq [x]$

$D_f = (-\infty, 2)$

ب) $y = \frac{1}{\sqrt{2-[x]}}$

$2-[x] > 0$

$2 > [x]$

$D_f = (-\infty, 2)$

الف) $y = \frac{1}{x[x]}$

$x[x] \neq 0$

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

ب) $y = \frac{1}{\sqrt{-2x[x]}}$

$-2x[x] > 0$

$x[x] < 0$

$D_f = \emptyset$

مطلوبه نهایی

$$\text{الف) } y = \sqrt{\underbrace{x - \frac{1}{r}}_{\alpha-1} + \underbrace{\left[x + \frac{r}{r}\right]}_{\alpha}}$$

$$r\alpha - 1 \geq 0$$

$$r\alpha \geq 1$$

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

$$\cancel{x + \frac{r}{r} \geq \frac{1}{r}} \rightarrow \cancel{\pi \geq \frac{1}{r}}$$

①

$$\text{ب) } y = \sqrt{\underbrace{x - \frac{1}{r}}_{\alpha} + \underbrace{\left[-x + \frac{1}{r}\right]}_{-\left[x - \frac{1}{r}\right]}} \rightarrow \sqrt{[\alpha] - [\alpha]}$$

$$\checkmark D_f = \left\{ x \mid x = k\pi \frac{1}{r}, k \in \mathbb{Z} \right\} \quad \underline{1}$$

$$\text{الف) } y = \frac{1}{r \sin^2 x - 1}$$

$$r \sin^2 x - 1 \neq 0$$

$$r \sin^2 x \neq 1$$

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

$$\sin x \neq \pm \frac{\sqrt{r}}{r} \quad (9)$$

$$D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{4} \right\}$$

0, \omega

$$\frac{1}{\sqrt{r}} \times \frac{\sqrt{r}}{\sqrt{r}} = \frac{\sqrt{r}}{r}$$

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

$$\sin x \neq 0$$

$$x \neq k\pi$$

$$\cos x \neq 0$$

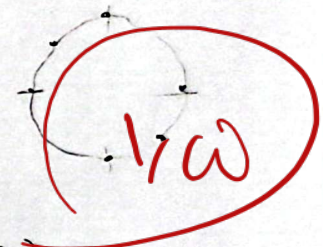
$$x \neq k\pi + \frac{\pi}{2}$$

$$\tan x + 1 \neq 0$$

$$\tan x \neq -1$$

$$x \neq k\pi - \frac{\pi}{4}$$

$$D_f = \mathbb{R} - \left\{ k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{4} \right\}$$



$$\text{الف) } y = \sqrt{r \sin x - 1}$$

$$r \sin x - 1 \geq 0$$

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

$$D_f = \left[4k\pi + \frac{\pi}{4}, 4k\pi + \frac{3\pi}{4} \right] \quad \checkmark$$

10

$$\text{ب) } y = \sqrt{1 - r \cos x}$$

$$1 - r \cos x \geq 0$$

$$1 \geq r \cos x$$

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

$$D_f = \mathbb{R} - \left\{ k\pi \pm \frac{\pi}{r} \right\} \quad \checkmark$$

