

الف) $y = \sqrt{4-x} - \sqrt{x-2}$ $2-x \geq 0$ $x \geq 2$ $4-x \geq 0$ $x \leq 4$ $2 \leq x \leq 4$ $D_f = [2, 4]$ $14 \geq 2-x$ $x \geq -14$

ب) $y = \sqrt{3-x} - \sqrt{x-2}$ $x-2 \geq 0$ $x \geq 2$ $3-x \geq 0$ $x \leq 3$ $2 \leq x \leq 3$ $D_f = [2, 3]$ $11 \geq x$

الف) $y = \sqrt{x-2}$ $x-2 \geq 0$ $x \geq 2$ $D_f = [2, \infty)$ $14 \geq 2-x$ $x \geq -14$ $3 \geq x-2$ $x \leq 5$ $11 \geq x$ $D_f = (-\infty, 5] \cup [3, \infty)$

ب) $y = \sqrt{3|x|-9}$ $3|x|-9 \geq 0$ $|x| \geq 3$ $x \geq 3$ or $x \leq -3$ $D_f = \mathbb{R} - \{3, -3\}$

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) $y = \frac{\sqrt{3-|x|}}{|x|+2}$ $3-|x| \geq 0$ $|x| \leq 3$ $-3 \leq x \leq 3$ $D_f = [-3, 3]$

ب) $y = \frac{\sqrt{4-x^2}}{|x|-1}$ $4-x^2 \geq 0$ $x^2 \leq 4$ $-2 \leq x \leq 2$ $|x|-1 \neq 0$ $|x| \neq 1$ $x \neq -1$ or $x \neq 1$ $D_f = [-2, 2] - \{-1, 1\}$

الف) $y = \frac{x+1}{\sqrt{x+|x|}}$ $x+|x| \geq 0$ $|x| \geq -x$ $D_f = \mathbb{R}^+ = (0, \infty)$

ب) $y = \frac{1}{\sqrt{x|x|}}$ $x|x| \geq 0$ $x \geq 0$ $D_f = (0, \infty)$

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

ب) $y = \frac{1}{\sqrt{2-[x]}}$ $2-[x] \geq 0$ $[x] \leq 2$ $D_f = (-\infty, 2]$

الف) $y = \frac{1}{x[x]}$ $x[x] \neq 0$ $D_f = \mathbb{R} - [0, 1)$

ب) $y = \frac{1}{\sqrt{-2x[x]}}$ $-2x[x] \geq 0$ $x[x] \leq 0$ $D_f = \emptyset$

0 ≤ x < 1

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

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

$$r\alpha \geq 1$$

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

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$$x + \frac{r}{r} \geq \frac{1}{r} \rightarrow x \geq -\frac{1}{r}$$

$D_f =$

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

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

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

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

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

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

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

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

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

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

$$\sin x \neq 0$$

$$x \neq k\pi$$

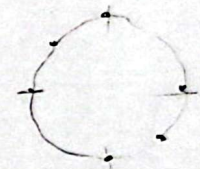
$$\cos x \neq 0$$

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

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

$$\tan x \neq -1$$

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



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

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

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

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

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

(10)

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

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

$$1 \geq r \cos x$$

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

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

