

الف)  $y = \sqrt{4-x}$   $\rightarrow 4-x \geq 0 \quad x \leq 4$   $D_f = [-4, 4]$  ۱

$4-x \geq 0 \quad x \leq 4$   $4 \geq \sqrt{4-x}$   $16 \geq 4-x$   $x \geq -12$   $D_f = [-12, 4]$

$\rightarrow \sqrt{4-x}$   $x-4 \geq 0 \quad x \geq 4$   $3-\sqrt{x-4} \geq 0$   $3 \geq \sqrt{x-4}$   $9 \geq x-4$   $x \leq 13$   $D_f = [4, 13]$

الف)  $y = \sqrt{4-2x^2}$   $4-2x^2 \geq 0 \quad x \leq 2$  ۲

$[-2, 2]$   $x \leq 2$   $x \leq \sqrt{2}$   $x \geq -\sqrt{2}$

ب)  $y = \sqrt{4|x|-9}$   $4|x|-9 \geq 0 \quad |x| \geq \frac{9}{4}$   $D_f = (-\infty, -\frac{9}{4}] \cup [\frac{9}{4}, +\infty)$

الف)  $y = \sqrt{\frac{|x|+1}{|x|-3}}$   $|x|-3 \neq 0 \quad |x| \neq 3 \quad x \neq \pm 3$  ۳

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

ب)  $y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$   $x \geq 0$   $D_f = [0, +\infty) - \{9\}$  ۴

$\sqrt{x}-3 \neq 0 \quad \sqrt{x} \neq 3 \quad x \neq 9$

$y = \frac{\sqrt{3-4x}}{|x|+2}$   $3-4x \geq 0 \quad x \leq \frac{3}{4}$   $x \geq -\frac{3}{4}$  ۵

$|x|+2 \neq 0 \quad |x| \neq -2$   $D_f = [-\frac{3}{4}, \frac{3}{4}]$

$y = \frac{\sqrt{4-x^2}}{|x|-1}$   $4-x^2 \geq 0 \quad x^2 \leq 4 \quad x \geq -2 \quad x \leq 2$   $D_f = [-2, 2] - \{1, -1\}$  ۶

$|x|-1 \neq 0 \quad |x| \neq 1 \quad x \neq \pm 1$

$\frac{x+1}{\sqrt{x+|x|}}$   $x+|x| > 0 \quad |x| > -x \quad D_f = \mathbb{R}^+$  ۷

$x+1 \geq 0 \quad x \geq -1$

$\frac{1}{\sqrt{x|x|}}$   $x|x| > 0 \quad x > 0 \quad D_f = \mathbb{R}^+$

$$\sqrt{r-[x]} \quad r-[x] \geq 0 \quad [x] \leq r \quad x < r \quad D_f = (-\infty, r) \quad \textcircled{5}$$

$$\frac{1}{\sqrt{r-[x]}} \quad r-[x] > 0 \quad [x] < r \quad x < r \quad D_f = (-\infty, r) \quad \textcircled{5}$$

$$y = \frac{1}{x[x]} \quad x[x] \neq 0 \quad x \neq 0 \quad [x] \neq 0 \quad x \neq [0, 1) \quad D_f = (-\infty, 0) \cup [1, +\infty) \quad \textcircled{5}$$

$$\frac{1}{\sqrt{-x[x]}} \quad -x[x] \geq 0 \quad x = + \text{ or } - \quad x = 0 \quad x = - \quad D_f = \emptyset$$

$$y = \sqrt{[x - \frac{1}{r}] + [x + \frac{r}{r}]} \quad [x - \frac{1}{r}] + [x + \frac{r}{r}] \geq 0 \quad [x + \frac{r}{r}] \geq 1 \quad [x + \frac{r}{r} - 1] + [x + \frac{r}{r}] \geq 0 \quad [x + \frac{r}{r}] \geq \frac{1}{r} \quad x + \frac{r}{r} \geq 1 \quad x \geq \frac{1}{r} \quad D_f = [\frac{1}{r}, +\infty) \quad \textcircled{5}$$

$$y = \sqrt{[x - \frac{1}{r}] + [-x + \frac{1}{r}]} \quad D_f = \{x | x = k + \frac{1}{r}, k \in \mathbb{Z}\}$$

$$\text{الف) } y = \frac{1}{r \sin^2 x - 1} \quad r \sin^2 x - 1 \neq 0 \quad r \sin^2 x \neq 1 \quad \sin x \neq \pm \frac{1}{\sqrt{r}} \quad \sin x \neq \pm \frac{1}{\sqrt{r}} \quad D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2}, k \in \mathbb{Z} \right\}$$

$$\text{الف) } y = \sqrt{r \sin x - 1} \quad r \sin x - 1 \geq 0 \quad r \sin x \geq 1 \quad \sin x \geq \frac{1}{r} \quad D_f = [k\pi + \frac{\pi}{6}, k\pi + \frac{5\pi}{6}]$$

$$\text{ب) } y = \sqrt{1 - r \cos x} \quad 1 - r \cos x \geq 0 \quad r \cos x \leq 1 \quad \cos x \leq \frac{1}{r} \quad D_f = [k\pi + \frac{\pi}{3}, k\pi + \frac{5\pi}{3}]$$