

الف)	۱	$4 - \sqrt{2-x} \geq 0 \quad 4 \geq \sqrt{2-x}$ $D_f = [-4 \ 2]$
ب)	۱	$3 - \sqrt{x-2} \geq 0 \quad 3 \geq \sqrt{x-2}$ $D_f = [2 \ 11]$
الف)	۲	$4 - 2x^2 \geq 0 \quad 4 \geq 2x^2 \quad 2 \geq x^2$ $D_f = [-\sqrt{2} \ \sqrt{2}]$
ب)	۲	$3 x - 9 \geq 0 \quad 3 x \geq 9 \Rightarrow x \geq 3$ $D_f = (-\infty -3] \cup [3 \infty)$
الف)	۳	$ x - 3 \geq 0 \quad x \geq 3$ $D_f = \mathbb{R} - \{\pm 3\}$
ب)	۳	$\sqrt{2x} - 3 \neq 0 \quad \sqrt{2x} \neq 3 \quad x \neq 9$ $D_f = \mathbb{R} - \{9\}$
الف)	۴	$3 - x \geq 0 \quad 3 \geq x \quad x \neq 0$ $D_f = [-3 \ 3]$
ب)	۴	$4 - x^2 \geq 0 \quad 4 \geq x^2 \Rightarrow 2 \geq x \rightarrow [-2 \ 2]$ $ x - 1 \neq 0 \Rightarrow x \neq \pm 1$ $D_f = [-2 \ 2] - \{\pm 1\}$
الف)	۵	 $x + x > 0$ $D_f = (0 \ +\infty)$
ب)	۵	$x x > 0 \quad D_f = (0 \ +\infty)$

$$r - [x] \geq 0 \quad r > [x] \quad D_f = (-\infty, r) \quad \text{(الف)}$$

$$r - [x] > 0 \quad r > [x] \quad D_f = (-\infty, r) \quad \text{(ب)}$$

$$x[x] \neq 0 \quad D_f = \mathbb{R} - [0, 1) \quad \text{(الف)}$$

$$-x[x] > 0 \quad [x] > x \quad D_f = \emptyset \quad \text{(ب)}$$

$$[x + \frac{1}{r} - 1] + [x + \frac{1}{r}] \geq 0 \rightarrow r[x + \frac{1}{r}] \geq 1 \rightarrow [x + \frac{1}{r}] \geq \frac{1}{r} \quad \text{(الف)}$$

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

$$x - \frac{1}{r} \in \mathbb{Z} \rightarrow D_f = \{x \mid x = k + \frac{1}{r}, k \in \mathbb{Z}\} \quad \text{(ب)}$$

$$r \sin^2 x \neq 0 \rightarrow r \sin^2 x \neq 1 \rightarrow \sin^2 x \neq \frac{1}{r} \rightarrow \sin x \neq \pm \frac{1}{\sqrt{r}} \quad \text{(الف)}$$

$$D_f = \mathbb{R} - \{k\pi + \frac{\pi}{\sqrt{r}}, k \in \mathbb{Z}\} \quad \text{(ب)}$$

$$\tan x + 1 \neq 0 \quad \tan x \neq -1 \rightarrow \text{Unit Circle Diagram}$$

$$D_f = \mathbb{R} - \{k\pi, k\pi - \frac{\pi}{\sqrt{r}}\} \quad \text{(الف)}$$

$$r \sin x - 1 \geq 0 \rightarrow r \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{r} \quad \text{(الف)}$$

$$D_f = [2k\pi + \frac{\pi}{\sqrt{r}}, 2k\pi + \frac{\pi}{\sqrt{r}}] \quad \text{(ب)}$$

$$1 - r \cos x \geq 0 \quad 1 \geq r \cos x \rightarrow \frac{1}{r} \geq \cos x \quad \text{(الف)}$$

$$D_f = [2k\pi - \frac{\pi}{\sqrt{r}}, 2k\pi + \frac{\pi}{\sqrt{r}}] \quad \text{(ب)}$$