

الف) $f(x)+2$ ب) $2f(x)$	۱) $f(x-1)$ ۲) $-f(x)$	۱
الف) $x^2-5x+4 > 0$ $(x-2)(x-3) > 0$ $(-\infty, 2) \cup (3, +\infty)$ ب) $x^2-9x+4 < 0$ $(x-1)(x-4) < 0$ $(1, 4)$	۱) $x^2+4x+4 > 0$ $(x+1)(x+4) > 0$ $(-\infty, -4] \cup [-1, +\infty)$ ۲) $x^2-7x+9 < 0$ $(x-1)(x-4) < 0$ $(1, 4)$	۲
الف) $\frac{x^2-3x+2}{x-2} < 0 \Rightarrow \frac{(x-1)(x-2)}{x-2} < 0$ $(-\infty, 1) \cup (2, +\infty)$	ب) $\frac{x^2-1}{x^2-4x+4} \geq 0 \Rightarrow \frac{(x-1)(x+1)}{(x-1)(x-2)} \geq 0$ $(-\infty, -1] \cup (2, +\infty)$	۳
الف) $y = \sqrt{\frac{x^2-1}{x^2-x}} \Rightarrow \frac{(x-1)(x+1)}{x(x-1)(x+1)} \geq 0$ $\frac{x^2-1}{x^2-x} \geq 0, x^2-x \neq 0$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	ب) $y = \sqrt{\frac{x^2-19}{x^2-2x+4}} \geq 0 \Rightarrow \frac{(x-4)(x+5)}{(x-1)(x-4)} \geq 0$ $D_g = (-\infty, -4] \cup (1, 4) \cup (5, +\infty)$	۴
الف) $y = \sqrt{4-\sqrt{2-x}}$ $2-x \geq 0 \Rightarrow x \leq 2$ $4-\sqrt{2-x} \geq 0 \Rightarrow \sqrt{2-x} \leq 4 \Rightarrow 2-x \leq 16 \Rightarrow x \geq -14$ $D_f = [-14, 2]$	ب) $y = \sqrt{3-\sqrt{x-2}}$ $x-2 \geq 0 \Rightarrow x \geq 2$ $3-\sqrt{x-2} \geq 0 \Rightarrow \sqrt{x-2} \leq 3 \Rightarrow x-2 \leq 9 \Rightarrow x \leq 11$ $D_g = [2, 11]$	۵

الف) $y = \sqrt{1 - 2x^2} \geq 0 \Rightarrow x^2 \leq 1 \Rightarrow x \leq \pm \sqrt{1}$

$$Df = \{ \cancel{[-\sqrt{2}]} \} \quad [-\sqrt{2}, \sqrt{2}]$$

$$\text{ب) } y = \sqrt{3|x| - 9} \geq 0 \Rightarrow |x| \geq 3$$

$$D_f = (-\infty, -1] \cup [1, +\infty)$$

الف) $y = \sqrt[10]{\frac{|x| + 1}{|x| - 1}}$

$$|n| - 1 \neq 0 \Rightarrow n \neq \pm 1$$

$$D_f = IR - \left\{ \pm 1 \right\}$$

$$\therefore y = \sqrt{\frac{\sqrt{x} + 1}{\sqrt{x} - 1}}$$

$$x \geq 0 \leftarrow$$

$$\sqrt{x} - 1 \neq 0 \Rightarrow x \neq 1$$

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

$$y = \frac{\sin x}{1 \cos x - 1} \quad \text{الف)}$$

$$r \cos u - 1 \neq 0 \Rightarrow \cos u \neq \frac{1}{r}$$

$$D_f = IR = \left\{ \gamma k \pi + \frac{\pi}{4}, \gamma k \pi + \frac{\Delta \pi}{4} \right\} \quad 1, \text{v} \delta$$

$$\text{b) } y = \frac{\cos x + 1}{y \sin x + 1} \neq 0 \Rightarrow \sin x \neq -\frac{1}{y}$$

$$D_f = \mathbb{R} - \left\{ 2K\pi + \frac{\sqrt{\pi}}{4}, 2K\pi + \frac{11\pi}{4} \right\}$$

$$2) y = \frac{\tan x + 1}{\cot x - 1}$$

$$\frac{\sin x + y}{\cos x}$$

$$\cos u \neq 0$$

$$\sin u \neq 0$$

$$V = IR - \left\{ \frac{kT}{q} \right\}$$

$$K_n + \frac{1}{\epsilon}$$

$$\Rightarrow y = \frac{\sin x + 1}{4 \sin x - 1}$$

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

$$y = \frac{1}{\sqrt{|u-x|} - \frac{1}{p}}$$

$$\sqrt{|u-r|} - \frac{1}{r}$$

$$r|u-r| - \frac{1}{r} > 0 \Rightarrow |u-r| > \frac{1}{r}$$

$$\begin{cases} u-r > \frac{1}{r} \Rightarrow u > \frac{1}{r} \\ u-r < -\frac{1}{r} \Rightarrow u < \frac{1}{r} \end{cases}$$

$$D_f = (-\infty, \frac{V}{F}) \cup (\frac{V}{F}, +\infty)$$

(الف) $y = \sqrt{f - r|u|} \geq 0 \Rightarrow r|u| \leq f \Rightarrow |u| \leq r$

$$D_f = \begin{bmatrix} -r, r \end{bmatrix}$$

$$\therefore y = \sqrt{\frac{|x|}{|x|}} \geq 0$$

$$|x| \neq 0 \Rightarrow x \neq 0$$

$$I_f = \mathbb{R} - \{0\}$$