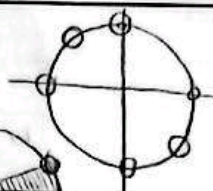
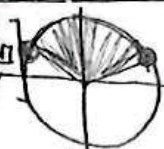


الف) $y = \frac{\cot x + 1}{\tan x + 1}$ $\tan x \neq -1$ $D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, k\pi + \frac{3\pi}{4} \right\}$ 

ب) $y = \sqrt{1 - r \sin^2 x}$ $D_f = \left[k\pi + \frac{\pi}{4}, k\pi - \frac{\pi}{4} \right]$ $1 - r \sin^2 x \geq 0$ $r \sin^2 x \leq 1$ $\sin^2 x \leq \frac{1}{r}$ $-\frac{1}{\sqrt{r}} \leq \sin x \leq \frac{1}{\sqrt{r}}$ 

الف) $y = \sqrt{r \sin x - 1}$ $r \sin x \geq 1$ $\sin x \geq \frac{1}{r}$ $D_f = \left[r k\pi + \frac{\pi}{4}, r k\pi + \frac{3\pi}{4} \right]$ 

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

$y = \arcsin(x^r + \frac{1}{x})$ $-1 \leq x^r + \frac{1}{x} \leq 1$ $D_f = [-\frac{1}{r}, -1] \cup [1, 0]$

$\frac{1}{x} x^r + \frac{1}{x} \leq 0$ $x(x + \frac{1}{x}) \leq 0$ $0 \leq x^r + \frac{1}{x} + \frac{1}{x}$ $(x + \frac{1}{x})(x + 1) \geq 0$ $x = -x$ $x \in [-1, 0] \cup [1, +\infty)$

$\cos y = \sqrt{\omega - rx}$ $0 \leq \sqrt{\omega - rx} \leq 1$ $0 \leq \omega - rx \leq 1$ $-\omega \leq rx \leq -\omega + 1$ $\frac{\omega}{r} \geq x \geq \frac{\omega - 1}{r}$ $D_f = \left[\frac{\omega}{r}, \frac{\omega - 1}{r} \right]$

الف) $1 - \log_{\frac{1}{\mu}} x > 0$ $D_f = (-\infty, \mu)$ $\log_{\frac{1}{\mu}} x < 1$ $x < \mu$

ب) $1 - \log_{\frac{1}{r}} x > 0$ $\log_{\frac{1}{r}} x < 1$ $x < \frac{1}{r}$ $D_f = (-\infty, \frac{1}{r})$

$y = \sqrt{r^n x - x^r} - 1$ $r^n x - x^r > 1$ $r^n x - x^r > \mu$ $x^r - rx + \mu < 0$ $(x - \frac{\mu}{r})(x - 1) < 0$ $D_f = [1, \mu]$

$y = \left(\frac{\mu x + \omega}{rx + \varepsilon} \right)^j$ $\frac{\mu x + \omega}{rx + \varepsilon} \in W$ $rx\omega + \mu\omega = \varepsilon x + \omega$

$rx\omega - \mu x = \omega - rx$ $x = \frac{\omega - rx}{rx - \mu}$ $D_f = \left\{ x \mid x = \frac{\omega - rx}{rx - \mu}, 1 \leq x \leq \mu \right\}$

$$الف) y = \frac{x+3}{2x^3+3x^2-11x+3} = \frac{x+3}{(x-1)(2x^2+5x-3)} \Rightarrow D_f = \mathbb{R} - \left\{-3, \frac{1}{2}, 1\right\}$$

$\frac{x^2+5x-3}{(x-1)(x-1)}$
 $\frac{x-3}{x-1} \quad \frac{x+1}{x-1}$

$$ب) y = \frac{x+3}{3x^3+9x^2+10x+3} = \frac{x+3}{(x+1)(3x^2+7x+3)} \Rightarrow D_f = \mathbb{R} - \left\{-3, -1, -\frac{1}{3}\right\}$$

$\frac{x^2+7x+3}{(x+1)(x+1)}$
 $\frac{x+3}{x+1} \quad \frac{x+1}{x+1}$

$$الف) y = \frac{x+3}{x^3-2x^2+2x-1} = \frac{x+3}{(x-1)(x^2-x+1)} \Rightarrow D_f = \mathbb{R} - \{1\}$$

$\frac{x^2-x+1}{(x-1)(x-1)}$
 $\frac{x+3}{x-1}$

$$ب) y = \frac{x+3}{(x-1)(x^2-x+1)} \Rightarrow D_f = (-\infty, -3] \cup (1, +\infty)$$

$\frac{x+3}{(x-1)(x^2-x+1)}$
 $\frac{x+3}{(x-1)(x^2-x+1)}$

$$y = \frac{2}{x^2-\omega(x-1)-2x+\omega} \Rightarrow D_f = \mathbb{R} - \{-3, 0, 2, \omega\}$$

$\frac{2}{x^2-\omega(x-1)-2x+\omega}$
 $\frac{2}{x^2-7x+10}$
 $\frac{(x-2)(x-5)}{(x-2)(x-5)}$
 $\frac{2}{(x-2)(x-5)}$
 $\frac{2}{(x-2)(x-5)}$
 $\frac{2}{(x-2)(x-5)}$

$$y = \sqrt{[x]-2} \quad [x] \geq 2 \quad -x \geq 2 \quad x \leq -2 \Rightarrow D_f = (-\infty, -2]$$

$$y = \frac{\omega x^2+4}{[x]^2-[x]-2} \Rightarrow ([x]-3)([x]+1) \Rightarrow D_f = \mathbb{R} - ([-1, 0) \cup [3, 4))$$

$\frac{\omega x^2+4}{[x]^2-[x]-2}$
 $\frac{(\omega x^2+4)}{([x]-3)([x]+1)}$
 $\frac{(\omega x^2+4)}{([x]-3)([x]+1)}$
 $\frac{(\omega x^2+4)}{([x]-3)([x]+1)}$
 $\frac{(\omega x^2+4)}{([x]-3)([x]+1)}$

$$الف) y = \sqrt{\left[x-\frac{1}{3}\right] + \left[x+\frac{2}{3}\right]} \Rightarrow \sqrt{\left[x-\frac{1}{3}+1\right] + \left[x+\frac{2}{3}\right]-1} = \sqrt{2\left[x+\frac{2}{3}\right]-1}$$

$\frac{2\left[x+\frac{2}{3}\right]-1}{2\left[x+\frac{2}{3}\right]-1}$
 $\frac{2\left[x+\frac{2}{3}\right]-1}{2\left[x+\frac{2}{3}\right]-1}$
 $\frac{2\left[x+\frac{2}{3}\right]-1}{2\left[x+\frac{2}{3}\right]-1}$
 $\frac{2\left[x+\frac{2}{3}\right]-1}{2\left[x+\frac{2}{3}\right]-1}$
 $\frac{2\left[x+\frac{2}{3}\right]-1}{2\left[x+\frac{2}{3}\right]-1}$

$$x + \frac{2}{3} \geq 1$$

$$x \geq \frac{1}{3}$$