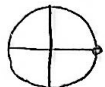
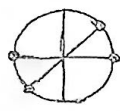


الف) $y = \frac{\sin x - 2}{2 \cos x + 1}$ $2 \cos x + 1 \neq 0 \rightarrow \cos x \neq -\frac{1}{2}$  $D_f = \mathbb{R} - \left\{ 2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3} \right\}$ -١

ب) $y = \frac{\sin x + 2}{\cos x - 1}$ $\cos x \neq 1$  $D_f = \mathbb{R} - \{ 2k\pi \}$

الف) $y = \frac{2 \sin x + 1}{\tan x + 1} \rightarrow \begin{cases} \tan x \neq -1 \\ \cos x \neq 0 \end{cases}$  $D_f = \mathbb{R} - \left\{ k\pi + \frac{3\pi}{4}, k\pi + \frac{\pi}{4} \right\}$ -٢

ب) $y = \frac{\cos x + 1}{\cot x - 1} \rightarrow \begin{cases} \cot x \neq 1 \\ \sin x \neq 0 \end{cases}$  $D_f = \mathbb{R} - \left\{ k\pi, k\pi + \frac{\pi}{2} \right\}$

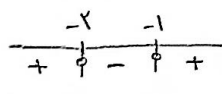
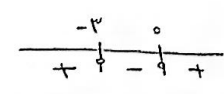
الف) $\sin y = x^2 - 2 \rightarrow -1 \leq x^2 - 2 \leq 1 \rightarrow 1 \leq x^2 \leq 3 \rightarrow \begin{cases} \sqrt{1} \leq x \leq \sqrt{3} \\ -\sqrt{1} \leq x \leq -\sqrt{3} \end{cases}$ -٣

$D_f = [-\sqrt{3}, -\sqrt{1}] \cup [\sqrt{1}, \sqrt{3}]$

ب) $y = \arccos(\sqrt{x} - 3) \rightarrow \begin{cases} \sqrt{x} \rightarrow x \geq 0 \\ -1 \leq \sqrt{x} - 3 \leq 1 \rightarrow 2 \leq \sqrt{x} \leq 4 \rightarrow 4 \leq x \leq 16 \end{cases}$ $D_f = [4, 16]$

الف) $\cos y = |x| - 2 \rightarrow -1 \leq |x| - 2 \leq 1 \rightarrow 1 \leq |x| \leq 3 \rightarrow \begin{cases} 1 < x < 3 \\ -3 < x < -1 \end{cases}$ $D_f = [-3, -1] \cup [1, 3]$ -٤

ب) $y = \arcsin(x^2 + 3x + 1) \rightarrow -1 \leq x^2 + 3x + 1 \leq 1 \rightarrow \begin{cases} x^2 + 3x + 1 \geq -1 \rightarrow x^2 + 3x + 2 \geq 0 \rightarrow (x+1)(x+2) \geq 0 \quad * \\ x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0 \quad ** \end{cases}$

  $D_f = [-3, -2] \cup [-1, 0]$

الف) $y = \log_{\frac{1}{2}}(x^2 - 4)$ $x^2 - 4 > 0 \rightarrow x^2 > 4 \rightarrow \begin{cases} x > 2 \\ x < -2 \end{cases}$ $D_f = (-\infty, -2) \cup (2, +\infty)$ -٥

ب) $y = \log_{\frac{1}{2}}(x^2 - |x|)$ $x^2 - |x| > 0 \rightarrow |x| < 2 \rightarrow -2 < x < 2$ $D_f = (-2, 2)$

الف) $y = \log_{\frac{1}{2}}(x - 3)$ $5 - x > 0 \rightarrow x < 5$
 $x - 3 > 0 \rightarrow x > 3$
 $x - 3 \neq 1 \rightarrow x \neq 4$

$D_f = (3, 5) - \{4\}$ -٦

$$D_f = (-3, -1) \cup (1, +\infty) - \{-1\}$$

$$D_f = (1, +\infty) - \{ \sqrt{2} \}$$

1/2/20 1/2/20

$$D_f = (-\Delta, -\gamma) \cup (\gamma, +\infty) - \{-\varepsilon\}$$

$$D_f = (x, 10]$$

$$\rho_f = (\sqrt{r}, +\infty) \quad \checkmark$$

$$D_f = \mathbb{R}$$

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

$$D_f = R - \log \epsilon$$

$$D_f = IR - \{ \log^w \varepsilon \}$$

$$D_f = \{x \mid x = \frac{k-1}{\varepsilon}, k \in \omega\}$$

$$D_f = \left\{ x \mid x = \frac{-r + \delta k}{k - r/k}, k \in \omega \right\}$$