

(الف) $y = \frac{x+1}{2x^4 + 1x^3 - 1x + 1}$ $\Rightarrow \frac{1x^4 + 1x^3 - 1x + 1}{2x^4 + 1x^3 - 1x + 1} \mid x-1$ (1)

$$\begin{array}{r} 2x^4 + 1x^3 - 1x + 1 \\ - (2x^4 + 1x^3) \\ \hline -1x + 1 \\ - (-1x + 1) \\ \hline 0 \end{array}$$

$D_f = R - \left\{1, -\frac{1}{2}, \frac{1}{2}\right\}$

(ب) $y = \frac{x+1}{1x^3 + 9x^2 + 1x + 1}$ $\Rightarrow \frac{1x^3 + 9x^2 + 1x + 1}{1x^3 + 9x^2 + 1x + 1} \mid x+1$

$$\begin{array}{r} 1x^3 + 9x^2 + 1x + 1 \\ - (1x^3 + 9x^2 + 1x + 1) \\ \hline 0 \end{array}$$

$D_g = R - \left\{-1, -\frac{1}{9}, -\frac{1}{9}\right\}$

(ج) $y = \frac{x+1}{x^2 - 1x^2 + 1x - 1}$ $\Rightarrow \frac{x^2 - 1x^2 + 1x - 1}{x^2 - 1x^2 + 1x - 1} \mid x-1$ (2)

$$\begin{array}{r} x^2 - 1x^2 + 1x - 1 \\ - (x^2 - 1x^2 + 1x - 1) \\ \hline 0 \end{array}$$

$D_f = R - \{1\}$

(د) $y = \frac{x+1}{x^2 - 1x^2 + 1x - 1}$ $\Rightarrow \frac{-1}{x^2 - 1x^2 + 1x - 1} \mid x-1$ $D_g: (-\infty, 1) \cup (1, +\infty)$

$$\begin{array}{r} -1 \\ - (x^2 - 1x^2 + 1x - 1) \\ \hline 0 \end{array}$$

(ع) $y = \frac{x+1}{x^2 - 1x^2 + 1x - 1}$ $\Rightarrow \frac{1}{x^2 - 1x^2 + 1x - 1} \mid x-1$ (3)

$$\begin{array}{r} 1 \\ - (x^2 - 1x^2 + 1x - 1) \\ \hline 0 \end{array}$$

$y = \frac{1}{x^2 - 1x^2 + 1x - 1}$ $\Rightarrow \frac{1}{x^2 - 1x^2 + 1x - 1} \mid x-1$

$$\begin{array}{r} 1 \\ - (x^2 - 1x^2 + 1x - 1) \\ \hline 0 \end{array}$$

$D_f = R - \{0, -1, 1\}$

(الف) $y = \sqrt{[-x]-2} \geq 0$ $[-x] \geq 2$ $-x \geq 2$ $x \leq -2$ $D_f = (-\infty, -2]$ (1)

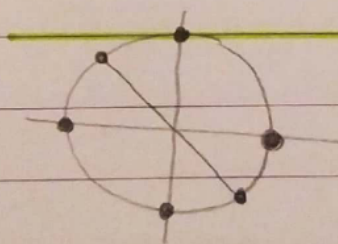
(ب) $y = \frac{5x^2+4}{[x]^2-1[x]-10} \neq 0$ $([x]-4)([x]+1) \neq 0$
 $[x] \neq 4$ $[x] \neq -1$ $D_g = \mathbb{R} - \{4, -1\}$
 $[10, 14)$ $(0, -1]$

(الف) $y = \sqrt{[x-\frac{1}{\mu}] + [x+\frac{\mu}{\mu}]} \geq 0$ $D_f = [\frac{1}{\mu}, +\infty)$
 $[x+\frac{1}{\mu}] \geq -\frac{1}{\mu}$
 $x - \frac{1}{\mu} \geq 0$ $x \geq \frac{1}{\mu}$

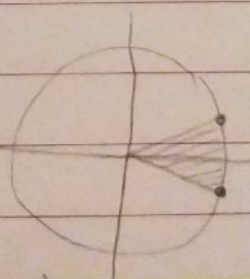
(ب) $y = \sqrt{[x-\frac{1}{\mu}] + [\frac{1}{\mu}-x]} \geq 0$ $x - \frac{1}{\mu} \in \mathbb{Z}$ $D_g = \{x | x = k + \frac{1}{\mu}, k \in \mathbb{Z}\}$
 $x \in \mathbb{Z} + \frac{1}{\mu}$

$[x] + [-x] \geq 0$
 $\mathbb{Z} \leq -1$

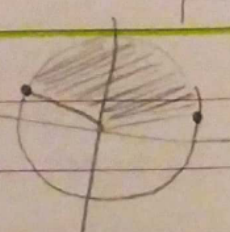
(الف) $y = \frac{\cos x}{\sin x + 1}$ $D_f = \mathbb{R} - \{k\pi, k\pi - \frac{\pi}{\mu}\}$ (1)
 $\tan x + 1 \neq 0$
 $\sin x \neq -\cos x$ $\tan x \neq -1$

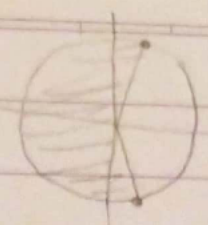


(ب) $y = \sqrt{1 - \sin^2 x} \geq 0$ $-\frac{1}{\mu} \leq \sin x \leq \frac{1}{\mu}$ $D_g = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$
 $\sin x \leq \frac{1}{\mu}$



(الف) $y = \sqrt{\sin x - 1} \geq 0$ $\sin x \geq 1$ $D_f = [k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}]$ (1)

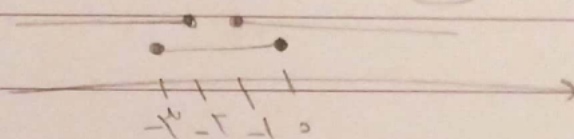


1) $y = \sqrt{1 - x \cos x} \geq 0 \quad \cos x \leq \frac{1}{x}$  $D_f = [K\pi + \frac{\pi}{x}, K\pi + \frac{\pi}{x}]$

الف) $y = \arcsin(x^{\frac{1}{x}}x+1) \rightarrow x^{\frac{1}{x}}x+1 \leq 1$ (1)

$D_f = [-\frac{1}{x}, -1] \cup [-1, 0]$

$\cdot x^{\frac{1}{x}}x+1$
 $\cdot x(x+1) \geq 0$
 $\frac{-1}{x} \leq -1$
 $\frac{-1}{x} \leq -1$



ب) $\cos y = \sqrt{0.5x} - 1 \rightarrow \sqrt{0.5x} \leq 1$

$D_f = [2, 0]$

$|0.5x| \leq 1$
 $-1 \leq 0.5x \leq 1$
 $x \leq 2$
 $x \geq -2$
 $x \geq 0$
 $\Rightarrow [2, 0] \cap [0, \infty)$

الف) $y = \log_r(1 - \log_{\frac{1}{r}} x) \geq 0 \quad x > 0 \quad \cap$ (1)

$\log_{\frac{1}{r}} x < 1 \quad x < r \quad D_f = (0, r)$

ب) $y = \log_r(1 - \log_{\frac{1}{r}} x) \geq 0 \quad x > 0 \quad \cap$

$\log_{\frac{1}{r}} x < 1 \quad x < \frac{1}{r} \quad D_f = (0, \frac{1}{r})$

الف) $y = \sqrt{x^{\frac{1}{x}} - 1} \geq 0 \quad x^{\frac{1}{x}} - 1 \geq 0 \quad x^{\frac{1}{x}} \geq 1$ (1)

$x^{\frac{1}{x}} - 1 \geq 0$
 $(x-1)(x-\frac{1}{x}) \leq 0$
 $\frac{1}{x} \leq 1$

ب) $y = \frac{(x+0)}{x+0} \cdot \frac{(x+0)}{x+0} \cdot \frac{(x+0)}{x+0}$ s.a.m

$D_f = \{x/x = \frac{-x+0}{x+0}, x \in \mathbb{R}\}$