

الف) $\frac{x+3}{2x^3+2x^2-11x+3} \Rightarrow 2x^3+2x^2-11x+3=0 \xrightarrow{\text{جمع ضرایب}} (x-1)(2x^2+4x-3)=0$
 $(x-1)(x-1)(x+\frac{3}{2})=0$
 $D_f = \mathbb{R} - \{1, -\frac{3}{2}, \frac{1}{2}\}$

ب) $\frac{x+3}{2x^3+9x^2+10x+3} \Rightarrow 2x^3+9x^2+10x+3=0 \xrightarrow{\text{جمع ضرایب}} (x+1)(2x^2+7x+3)=0$
 $(x+1)(x+\frac{1}{2})(x+\frac{3}{2})=0$
 $D_f = \mathbb{R} - \{-1, -\frac{3}{2}, -\frac{1}{2}\}$

الف) $\frac{x+3}{x^3-2x^2+2x-1} \Rightarrow x^3-2x^2+2x-1=0 \xrightarrow{\text{جمع ضرایب}} (x-1)(x^2-x+1)=0$
 $D_f = \mathbb{R} - \{1\}$

ب) $\frac{x+3}{(x-1)(x^2-x+1)} \geq 0$
 $D_f = (-\infty, -\frac{3}{2}] \cup (1, +\infty)$

$x^2-5|x-1|-2x+5=0$
 $(1, +\infty) - \{2, 5\}$
 $\begin{cases} x-1 \geq 0 \Rightarrow x \geq 1 \Rightarrow x^2-5(x-1)-2x+5 = x^2-5x+5-2x+5 = x^2-7x+10 = (x-2)(x-5) \\ x-1 \leq 0 \Rightarrow x \leq 1 \Rightarrow x^2+5x-5-2x+5 = x^2+3x = x(x+3) \end{cases}$
 $D_f = \mathbb{R} - \{-\frac{3}{2}, \frac{1}{2}, 5\}$

الف) $[-x]-2 \geq 0 \quad [-x] \geq 2 \quad x \in (-\infty, -2] \quad D_f = (-\infty, -2]$
 ب) $[x]^2-2[x]-3=0 \quad ([x]-3)([x]+1)=0$
 $[x]=3 \Rightarrow x \in [3, 4)$
 $[x]=-1 \Rightarrow x \in [-1, 0)$
 $D_f = \mathbb{R} - ([3, 4) \cup [-1, 0))$

الف) $[x-\frac{1}{3}] + [x+\frac{1}{3}] \geq 0 \Rightarrow [z] + [z+1] \geq 0 \Rightarrow 2[z] \geq -1 \quad [z] \geq -\frac{1}{2}$
 $z \rightarrow [0, +\infty)$
 $x = [-\frac{1}{3}, +\infty)$

ب) $[x-\frac{1}{3}] + [\frac{1}{3}-x] \geq 0 \xrightarrow{\text{در واقع}} [x] + [-x] \geq 0 \quad D_f = \{x \mid x \in \mathbb{Z} - \frac{1}{3}\}$

$$\text{الف) } \frac{\cos x + 1}{\sin x} + \frac{\sin x}{\cos x + 1} = \frac{\cos x + \sin x}{\sin x + \cos x} = \frac{\cos x (\cos x + \sin x)}{\sin x (\cos x + \sin x)} = 0$$

$$D_f = \mathbb{R} - \left\{ k\pi, k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right\} \quad x = k\pi \quad \cos x = -\sin x \quad x = k\pi - \frac{\pi}{2}$$

$$\text{ب) } 1 - \sqrt{\sin x} \geq 0 \quad \sqrt{\sin x} \leq 1 \quad \sin x \leq \frac{1}{p} \quad -\frac{1}{p} \leq \sin x \leq \frac{1}{p} \quad D_f = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$$

$$\text{الف) } \sqrt{\sin x} - 1 \geq 0 \quad \sqrt{\sin x} \geq 1 \quad \sin x \geq \frac{1}{p} \quad D_f = \left[k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \right]$$

$$\text{ب) } 1 - \sqrt{\cos x} \geq 0 \quad \sqrt{\cos x} \leq 1 \quad \cos x \leq \frac{1}{p} \quad D_f = \left[k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \right]$$

$$\text{الف) } -1 \leq x^p + y^p + 1 \leq 1 \rightarrow -1 \leq x^p + y^p + 1 \Rightarrow (x+1)(y+1) \geq 0$$

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

$$\text{ب) } -1 \leq \cos y \leq 1 \Rightarrow -1 \leq \sqrt{a-2x} \leq 1 \Rightarrow 0 \leq (a-2x)^p \leq 1$$

$$\text{الف) } 1 - (\log_p x) > 0 \quad \log_p x < 1 \quad x < p \quad x > 0 \Rightarrow 0 < x < p$$

$$D_f = \left[\frac{1}{p}, \frac{p}{p-1} \right]$$

$$\text{ب) } 1 - \log_{\frac{1}{p}} x > 0 \quad \log_{\frac{1}{p}} x < 1 \quad x > 0 \quad x < \frac{1}{p} \Rightarrow 0 < x < \frac{1}{p}$$

$$\text{الف) } y^{x-x^p} - 1 \geq 0 \quad y^{x-x^p} \geq y^p \quad x - x^p \geq p \Rightarrow (x-1)(x-p) \leq 0$$

$$D_f = [1, p]$$

$$\text{ب) } \frac{p x + a}{x + p} \in W \quad x \in -\frac{pW + a}{pW - p} = \frac{-pW + a}{pW - p}$$

$$D_f = \left\{ x \mid x = \frac{-pK + a}{pK - p}, K \in W \right\}$$

سیاس از شما