

الف) $\frac{x+3}{(n+1)(2x^2+5x-3)} \rightarrow -3$
 $(n+1)(2x^2+5x-3) \sim 2x^2+5x-3=0$
 $\frac{-5 \pm \sqrt{25+24}}{4} \rightarrow \frac{1}{2}, -3$
 $D_f = \mathbb{R} - \{\frac{1}{2}, -3, 1\}$

ب) $\frac{x+3}{(x+1)(2x^2+7x+4)} \rightarrow x^2+7x+4=0$
 $(n+1)(n+9) \rightarrow -\frac{9}{2}, -\frac{1}{2}$
 $D_f = \mathbb{R} - \{-1, -\frac{1}{2}, -3\}$

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

ب) $\frac{x+3}{(n-1)(x^2-x+1)} \geq 0 \rightarrow \frac{-3}{+4-\frac{1}{n+1}}$
 $D_f = (-\infty, 3] \cup (1, +\infty)$

if $x \geq 1$ $\frac{x^2-5x+5-2x+5}{x^2-7x+1} \Rightarrow \frac{2}{x^2-7x+1} \cdot (n-4)(n-5)$

if $x < 1$ $\frac{4}{x^2+3x} \sim 0 > -3 \quad D_f = \mathbb{R} - \{-3, 0, 2, 0\}$

الف) $[x]-2 \geq 0 \quad [m] \geq 2 \quad x \leq -2$

ب) $\frac{5x^2+4}{[m]^2-2[m]-3} \rightarrow 3 \leq x < 4 \quad -1 \leq m < 0$
 $([m]-3)([m]+1)$
 $D_f = \mathbb{R} - \{[134] \cup [-1, 0]\}$

الف) $\sqrt{[x+\frac{1}{4}-1]} + [m+\frac{1}{4}] \geq 0 \quad [m+\frac{1}{4}] + [x+\frac{1}{4}] \geq 1$
 $D_f = \{\frac{1}{4}, \frac{5}{4}\}$
 $[m+\frac{1}{4}] \geq \frac{1}{4} \rightarrow [m+\frac{1}{4}] \geq 1$
 $\frac{1}{4} > m + \frac{1}{4} \rightarrow m < 0$
 $\frac{5}{4} > x + \frac{1}{4} \rightarrow x < 1$

ب) $\sqrt{[x-\frac{1}{4}]} + [-(x-\frac{1}{4})] \quad D_f = x - \frac{1}{4} \leq 2$
 $D_f = \{x | x = k + \frac{1}{4}, k \in \mathbb{Z}\}$

$$\frac{\cos x}{\sin x} + 1 \quad \sin x \neq 0 \quad \tan x \neq -1 \quad D_f = IR - \left\{ \frac{\pi}{2}, \pi, \frac{3\pi}{2} \right\} \quad \{k\pi + \frac{\pi}{2}\}$$

$$\frac{\sin x}{\cos x} \neq 1$$

ج) $1 - \sin^2 x \geq 0 \quad \sin^2 x \leq 1 \quad \sin^2 x \leq \frac{1}{4} \quad -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$

$$D_f = \left\{ [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}] \right\}$$

الف) $\sqrt{\sin x - 1} \geq 0 \quad \sin x \geq \frac{1}{4} \quad D_f = [2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4}]$

ج) $1 - \sqrt{\cos x} \geq 0 \quad \frac{1}{4} \geq \cos x$

$$D_f = [2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3}]$$

الف) $-1 \leq x^2 + 3x + 1 \leq 1$

$$\begin{aligned} & \begin{cases} x^2 + 3x \leq 0 & \frac{-3 \pm \sqrt{9-4}}{2} = \frac{-3 \pm \sqrt{5}}{2} \quad [-3, 0] \\ x^2 + 3x + 2 \geq 0 & \frac{-3 \pm \sqrt{9-8}}{2} = \frac{-3 \pm 1}{2} \quad (-\infty, -2] \cup [-1, +\infty) \end{cases} \\ & \text{د) } \rightarrow [-3, -2] \cup [-1, 0] \end{aligned}$$

ب) $0 \leq \sqrt{a-2x} \leq 1 \xrightarrow{\text{تربيع}} 0 \leq a-2x \leq 1$ $D_f = [a-1, a]$

$0 \leq a-2x \quad -1 \leq a-2x \leq 1 \rightarrow -a \leq -2x \leq -a-1 \quad x \geq \frac{a+1}{2}$

الف) $1 - \log_{\frac{x}{3}} > 0 \quad 1 > \log_{\frac{x}{3}} \quad x < 3 \quad x > 0$

$$D_f = (0, 3)$$

ب) $1 - \log_{\frac{x}{4}} > 0 \quad 1 > \log_{\frac{x}{4}} \quad x > \frac{1}{4} \quad x > 0$

$$D_f = (\frac{1}{4}, +\infty)$$

الف) $2^x - x^2 \geq 2^3 \quad 2^x - x^2 \geq 8 \quad x^2 + 3 - 2^x \leq 0 \quad (n-1)(n-3)$

$$D_f = [1, 3] \quad \frac{1}{2} \pm \frac{\sqrt{5}}{2}$$

ب) $\frac{2^x + a}{2^x + 4} \in \mathbb{W}$

$m \in -\frac{5\mathbb{W}-a}{2^{\mathbb{W}}-4} \quad D_f = \left\{ x \mid x = \frac{-4k+a}{2^k-4}, k \in \mathbb{W} \right\}$

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