

۱۹۱۷۵ آفرین عالی نوشتی

$$\text{الف) } \frac{x^3 + 10x^2 + 10x + 1}{x^2 + 5x - 3} = (x+3) \frac{x-1}{x^2 + 5x - 3}$$

$$D_f = \mathbb{R} - \{-3, \frac{1}{5}, 1\}$$

$$\text{ب) } \frac{x^3 + 9x^2 + 10x + 1}{x^2 + 5x + 3} = (x+1) \frac{x+1}{x^2 + 5x + 3}$$

$$D_f = \mathbb{R} - \{-1, -\frac{1}{5}, \frac{1}{3}\}$$

$$\text{الف) } \frac{x^3 - 2x^2 + 2x - 1}{x^2 - x + 1} \Rightarrow \frac{0}{0} \Rightarrow \frac{0}{0}$$

$$D_f = \mathbb{R} - \{1\}$$

$$\text{ب) } \frac{-1}{x} \rightarrow \frac{1}{x}$$

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

$$x-1 \geq 0 \rightarrow x \geq 1 \rightarrow x^2 - 7x + 10 = (x-2)(x-5) \rightarrow x \neq 2, 5$$

$$\Rightarrow D_f = \mathbb{R} - \{-1, 0, 2, 5\}$$

$$x-1 < 0 \rightarrow x < 1 \rightarrow x^2 + 3x = x(x+3) \rightarrow x \neq 0, -3$$

$$\text{الف) } [x] - 2 \geq 0 \rightarrow [x] \geq 2 \rightarrow -x \geq 2 \rightarrow x \leq -2$$

$$D_f = \mathbb{R} - \{-\infty, -2\}$$

$$\text{ب) } t^2 - 2t - 3 \neq 0 \Rightarrow (t-3)(t+1) \neq 0 \rightarrow t \neq -1, 3$$

$$\Rightarrow [x] \neq -1 \rightarrow x \in [-1, 0), [x] \neq 3 \rightarrow x \in [3, 4) \Rightarrow D_f = \mathbb{R} - \{[-1, 0), [3, 4)\}$$

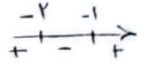
$$\text{الف) } [x - \frac{1}{5} + 1] + [x + \frac{1}{5}] \geq 1 \quad \vee [x + \frac{1}{5}] \geq 1 \quad [x + \frac{1}{5}] \geq \frac{1}{5} \quad x + \frac{1}{5} \geq 1 \quad x \geq \frac{4}{5}$$

$$D_f = \mathbb{R} - \{\frac{1}{5}, +\infty\}$$

$$\text{ب) } [t] + [-t] \geq 0 \rightarrow t \in \mathbb{Z}$$

$$\rightarrow D_f = \{n | t = n - \frac{1}{5}, t \in \mathbb{Z}\}$$

$$t = n - \frac{1}{5}$$

الف) $\tan x \neq -1$ $\cos x \neq 0$ $D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi - \frac{\pi}{4} \right\}$ $\sin x \neq 0$! $\sin x$ باید متغیر نشود! $\sin x$ $x \neq k\pi$ 	
ب) $1 \geq \sin^2 x \rightarrow \sin^2 x \leq \frac{1}{4} \rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$ $D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$ 	1/10
الف) $\sin x \geq \frac{1}{4}$ $D_f = \left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right]$ ب) $\cos x \leq \frac{1}{4}$ $D_f = \left[2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right]$	Y
الف) $-1 \leq x^2 + 3x + 1 \leq 1 \rightarrow 0 \leq x^2 + 3x + 2 \rightarrow x \leq (x+1)(x+2) \Rightarrow (-\infty, -2] \cup [1, +\infty)$ $x(x+3) \leq 0 \rightarrow [-3, 0]$ $D_f = [-3, -2] \cup [1, 0]$ ب) $\sqrt{0-x} \leq 1 \rightarrow 0-x \leq 1 \rightarrow x \geq -1 \rightarrow x \geq -1$ $D_f = [-1, 0]$ $0-x \geq 0 \quad x \leq 0 \quad x \in [-1, 0]$ 	A
الف) $x > 0$ $1 - \log_{\frac{1}{4}} x > 0 \rightarrow 1 > \log_{\frac{1}{4}} x \rightarrow x < 4 \rightarrow D_f = (0, 4)$ ب) $x > 0$ $1 > \log_{\frac{1}{4}} x \rightarrow x > \frac{1}{4} \rightarrow D_f = \left(\frac{1}{4}, +\infty \right)$	9
الف) $x - x^2 \geq 3$ $x^2 - x + 3 \leq 0$ $\frac{1}{+} \frac{-}{-} \frac{+}{+}$ $D_f = [1, 3]$ ب) $\frac{x+5}{x+2} \in \mathbb{W}$ $x \in \frac{(\mathbb{W}-5)}{x-2}$ $D_f = \left\{ x \mid x = \frac{5-k}{x-2}, k \in \mathbb{W} \right\}$	10

۴- الف) $y = \frac{\cot x + 1}{\tan x + 1}$

$$x \neq k\pi + \frac{\pi}{2}$$

$$x \neq k\pi + \frac{\pi}{4} \cup x \neq k\pi$$

$$\rightarrow x \neq \frac{k\pi}{4}$$

