

$$\frac{2n^2 + 2n^2 - 1n + 2}{n-1} = 2n^2 + 8n - 3 \leadsto 2n^2 + 8n - 3 \neq 0 \leadsto \Delta = 48 + 24 = 72 \quad (الف)$$

$$\frac{-8 \pm \sqrt{72}}{4} \leadsto \frac{1}{-2} \leadsto D_F = R - \{1, -3, \frac{1}{2}\} \quad (ب) \quad \frac{2n^2 + 9n^2 + 10n + 2}{n+1} \leadsto n \neq -1$$

$$\leadsto 2n^2 + 7n + 2 \neq 0 \leadsto \Delta = 49 - 16 = 33 \leadsto \frac{-7 \pm \sqrt{33}}{4} \leadsto \frac{-3}{2}, -\frac{1}{2} \leadsto D_F = R - \{1, -\frac{1}{2}, -\frac{3}{2}\}$$

$$\frac{n^2 - 2n^2 + 2n - 1}{n-1} \leadsto n^2 - n + 1 \leadsto \Delta = 1 - 4 \leadsto \text{ریشه ندارد} \leadsto D_F = R - \{1\} \quad (الف)$$

$$\frac{n+3}{n^2 - 2n^2 + 2n - 1} \geq 0 \leadsto n^2 - 2n^2 + 2n - 1 = (n-1)(n^2 - n + 1)$$

$$n^2 - n + 1 > 0 \quad \frac{n+3}{n-1} \geq 0 \leadsto n \leq -3 \quad n \neq 1 \quad D_F = (-\infty, -3] \cup (1, +\infty)$$

$$n^2 - 8|n-1| - 2n + 8 \neq 0 \xrightarrow{n \geq 1} n^2 - 8(n-1) - 2n + 8 = 0$$

$$n^2 - 10n + 8 = 0 \rightarrow (n-2)(n-8) = 0 \rightarrow n = 2, 8 \xrightarrow{n \leq 1} n^2 - 8(1-n) - 2n + 8 = 0$$

$$n^2 + 6n = 0 \rightarrow n(n+6) = 0 \rightarrow n = 0, -6$$

$$D_F = (-\infty, -3] \cup (-3, 0] \cup (0, 2) \cup (2, 8) \cup (8, +\infty)$$

$$[-n] - 2 \geq 0 \leadsto [-n] \geq 2 \leadsto n \leq -2 \leadsto D_F = (-\infty, -2] \quad (الف)$$

$$\Delta = 4 + 12 \rightarrow 16$$

$$[n]^2 - 2[n] - 2 \neq 0$$

$$\frac{2 \pm 4}{2} \leadsto \frac{3}{-1}$$

$$D_F = R - \{(3, 2] \cup (0, -1]\}$$

$$[n - \frac{1}{4}] \geq -[n + \frac{1}{4}] \quad \times \quad -\frac{1}{2} \times \quad -1 \times \quad \frac{1}{4} \checkmark \quad \frac{1}{4} \checkmark \quad 1 \checkmark \quad 2 \checkmark \quad (الف)$$

$$D_F = (+\infty, 0) \quad | \quad [n - \frac{1}{4}] \geq -[\frac{1}{4} - n] \leadsto [n - \frac{1}{4}] \geq 0 \quad (ب)$$

$$n \geq \frac{1}{4} \leadsto D_F = (+\infty, \frac{1}{4}]$$

$\frac{\cos}{\sin} + 1 \rightarrow \sin, \cos \neq 0 \quad \frac{\sin}{\cos} \neq -1 \rightarrow \sin \neq -\cos$ $\frac{\sin}{\cos} + 1 \quad D_f = \mathbb{R} - \left\{ \frac{k\pi}{2}, -\frac{\pi}{2} \right\}$	(الف) $x \neq 180^\circ, 90^\circ$	6
$1 - \sqrt{\sin^2} \geq 0 \rightarrow 1 \geq \sqrt{\sin^2} \rightarrow \frac{1}{\sqrt{}} \geq \sin^2 \rightarrow \frac{1}{\sqrt{}} \geq \sin \rightarrow \frac{1}{\sqrt{}} \geq \sin \geq -\frac{1}{\sqrt{}}$ $D_f = \left[k\pi + \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right] \cup \left[2k\pi + \frac{\pi}{2}, 2k\pi - \frac{\pi}{2} \right]$		
$\sqrt{\sin} - 1 \geq 0 \rightarrow \sqrt{\sin} \geq 1 \rightarrow \sin \geq \frac{1}{4} \rightarrow D_f = \left[k\pi + \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$	(الف)	
$1 - \sqrt{\cos} \geq 0 \rightarrow 1 \geq \sqrt{\cos} \rightarrow \frac{1}{\sqrt{}} \geq \cos \rightarrow D_f = \left[2k\pi + \frac{\pi}{2}, 2k\pi + \frac{\pi}{2} \right]$	(ب)	7
$-1 \leq x^2 + 3x + 1 \leq 1 \quad \begin{cases} x^2 + 3x + 1 \geq 0 \rightarrow (x+1)(x+2) \geq 0 \\ x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0 \end{cases}$ $\rightarrow x \leq -2, x \geq -1 \quad x^2 + 3x \leq 0 \quad x(x+3) \leq 0$ $-2 \leq x \leq 0$ $D = [-2, -1] \cup [-1, 0]$	(الف) (ب)	8
$1 > 1.9 \frac{x}{2} \rightarrow x < 2 \rightarrow D_f = (-\infty, 2)$	(الف)	
$1 > \log \frac{x}{2} \rightarrow \frac{1}{2} > x \rightarrow D_f = \left(\frac{1}{2}, -\infty \right)$	(ب)	9
$\sqrt{e^x - x^2} \geq 1 \rightarrow e^x - x^2 \geq 1 \rightarrow -x^2 + e^x - 1 \geq 0 \rightarrow a+b+c=0 \rightarrow \dots$ $\frac{1}{-d+e} \rightarrow D_f = [2, 1]$	(الف)	
$x^2 + 1 \neq 0 \rightarrow x \neq -1 \rightarrow x \neq 1 \rightarrow D_f = \mathbb{R} - \{-1, 1\}$	(ب)	10