

الف) $2x^2 + 3m^2 - 8m + 3 \neq 0$

$(m-1)(2m+9)(m-\frac{1}{2}) \neq 0$

$m \neq 1, -\frac{9}{2}, \frac{1}{2}$

$D_f = \mathbb{R} - \{-\frac{9}{2}, \frac{1}{2}, 1\}$

(1)

ب) $2m^2 + 9m^2 + 10m + 3 \neq 0$

$(m+1)(2m+9)(m+\frac{1}{2}) \neq 0$

$m \neq -1, -\frac{9}{2}, -\frac{1}{2}$

$D_f = \mathbb{R} - \{-\frac{9}{2}, -1, -\frac{1}{2}\}$

الف) $m^3 - 2m^2 + 2m - 1 \neq 0$

$(m-1)(m^2 - m + 1) \neq 0$

$m \neq 1$

$\rightarrow (m^2 - m + 1) \neq 0$ زیرا Δ آن منفی است.

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

(2)

ب) $m^3 - 2m^2 + 2m - 1 \neq 0$

$m \neq 1 \quad (I)$

$\frac{(m+3)}{(m-1)(m^2 - m + 1)} \geq 0$

$\frac{1}{1 + \frac{-3}{m-1} + \frac{1}{m^2 - m + 1}}$

$m \neq \{-3, 1\} \quad (II)$

لذا (تقریباً منفی است و این عبارت همیشه مثبت و فاکتور است.

$D_f = (-\infty, -3] \cup (1, +\infty) \quad (I) \cap (II)$

(3)

$m^2 - \omega |m-1| - 2m + \omega \neq 0$

$\frac{m}{m^2 + \omega m - \omega - 2m + \omega} \mid \frac{1}{m^2 - \omega m + \omega - 2m + \omega}$

$m^2 + 3m$

$m^2 - 7m + 10$

①: $m^2 + 3m \neq 0$

$m \neq 0, -3$

(مها باین شرط $m < 0$ باطل است و این حد و مقدارها هستند.

①

②

$\Rightarrow D_f = \mathbb{R} - \{-3, 0, 2, 5\}$

②: $m^2 - 7m + 10 \neq 0$

$m \neq 2, 5$

(مها باین شرط $m > 0$ باطل است و این حد و مقدارها هستند.

(6)

$$\text{الف) } [-n] - 2 \geq 0$$

$$[-n] \geq 2$$

$$n < -2$$

$$R_f = (-\infty, -2)$$

$$\text{ب) } [n]^2 - 2[n] - 3 \neq 0$$

$$([n] - 3)([n] + 1) \neq 0 \leadsto [n] \neq 3 \text{ and } [n] \neq -1$$

$$n \notin [3, 4)$$

$$n \notin [-1, 0)$$

$$R_f = (-\infty, -1) \cup [0, 3) \cup [4, +\infty)$$

(7)

$$\text{الف) } [n - \frac{1}{k}] + [n + \frac{k}{k}] \geq 0$$

$$2[n + \frac{k}{k}] \geq 1$$

$$[n + \frac{k}{k}] \geq \frac{1}{2}$$

$$\leadsto [n + \frac{k}{k}] \geq 1 \quad \left(\begin{array}{l} \text{چون جواب بهایت همواره عدد صحیح است} \\ \text{پس بهایت و قدر بزرگتر مساوی} \frac{1}{2} \text{ باشد،} \\ \text{یعنی حداقل بزرگتر مساوی 1 است.} \end{array} \right)$$

$$[K] \geq 1 \Rightarrow K \geq 1$$

$$n + \frac{k}{k} \geq 1$$

$$n \geq \frac{1}{k}$$

$$R_f = [\frac{1}{k}, +\infty)$$

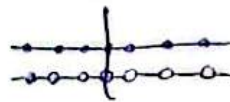
$$\text{ب) } [n - \frac{1}{k}] + [\frac{1}{k} - n] \geq 0$$

$$[K] + [-K] \geq 0$$

$$K \in \mathbb{Z}$$

$$n - \frac{1}{k} \in \mathbb{Z}$$

$$n \in \mathbb{Z} + \frac{1}{k}$$



$$R_f = \{n \mid n \in \mathbb{Z} + \frac{1}{k}\}$$

الف) $\sin_m \neq 0$ and $\cos_m \neq 0$ and $\tan_m \neq -1$



$$K\pi$$



$$K\pi + \frac{\pi}{2}$$



$$K\pi - \frac{\pi}{2}$$

$$D_f = \mathbb{R} - \left\{ \frac{K\pi}{2}, K\pi - \frac{\pi}{2} \right\}$$

ب) $1 - \varepsilon \sin^2_m \geq 0$

$$\varepsilon \sin^2_m \leq 1$$

$$\sin^2_m \leq \frac{1}{\varepsilon}$$

$$-\frac{1}{\sqrt{\varepsilon}} \leq \sin_m \leq \frac{1}{\sqrt{\varepsilon}}$$



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

الف) $\varepsilon \sin_m - 1 \geq 0$

$$\varepsilon \sin_m \geq 1$$

$$\sin_m \geq \frac{1}{\varepsilon}$$



$$D_f = \left[\varepsilon K\pi + \frac{\pi}{4}, \varepsilon K\pi + \frac{\pi}{2} \right]$$

ب) $1 - \varepsilon \cos_m \geq 0$

$$\varepsilon \cos_m \leq 1$$

$$\cos_m \leq \frac{1}{\varepsilon}$$



$$D_f = \left[\varepsilon K\pi + \frac{\pi}{2}, \varepsilon K\pi - \frac{\pi}{2} \right]$$

الف) $-1 \leq x^2 + y^2 + 1 \leq 1$

$$x^2 + y^2 + 1 \geq 0$$

and

$$x^2 + y^2 \leq 0$$

$$\begin{array}{r} -2 \quad -1 \\ + \quad - \quad + \end{array}$$

$$\begin{array}{r} -2 \quad 0 \\ + \quad - \quad + \end{array}$$

$$x \in (-\infty, -2] \cup [-1, +\infty) \quad (I)$$

$$x \in [-2, 0] \quad (II)$$

$$D_f = (I) \cap (II) = [-2, -2] \cup [-1, 0]$$

$$ب) -1 \leq \sqrt{\omega - 2m} \leq 1$$

$$0 \leq \omega - 2m \leq 1$$

$$\omega \geq 2m \geq \varepsilon$$

$$2,0 \geq m \geq 2$$

$$D_f = [2, 4, 8]$$

$$الف) \quad m > 0 \quad (I)$$

$$1 - \log_m^m > 0$$

$$\log_m^m < 1$$

$$m < (m^1) \quad (II)$$

$$D_f = (I) \cap (II) = (0, 2)$$

$$ب) \quad m > 0 \quad (I)$$

$$1 - \log_{\frac{1}{m}}^m > 0$$

$$\log_{\frac{1}{m}}^m < 1$$

$$m > (\frac{1}{m}) \quad (II)$$

$$D_f = (I) \cap (II) = (\frac{1}{2}, +\infty)$$

$$الف) \quad 2^{\varepsilon m - m^2} - 1 > 0$$

$$2^{\varepsilon m - m^2} > 2^0$$

$$\varepsilon m - m^2 > 0 \quad \sim \quad -m^2 + \varepsilon m - 0 > 0$$

$$\begin{array}{c} 1 \quad 2 \\ | \quad - \quad + \quad - \\ - \quad + \quad - \end{array}$$

$$D_f = [1, 2]$$

$$ب) \quad \frac{2m + \omega}{2m + \varepsilon} \in \omega$$

$$m = - \frac{\varepsilon \omega - \omega}{2\omega - 2} = \frac{-\varepsilon \omega + \omega}{2\omega - 2}$$

$$D_f = \{m / m \in \frac{-\varepsilon K + \omega}{2K - 2}, K \in \omega\}$$

(9)

(10)