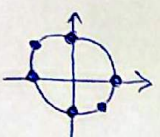
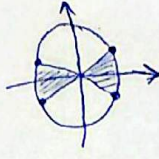
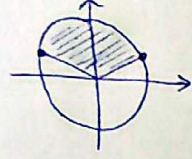
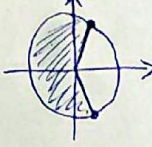
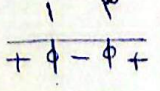


الف) $2n^3 + 3n^2 - 11n + 3 \neq 0$ جمع ضرایب صفر $\Rightarrow (n-1)$ بخش پذیر $\frac{2n^3 + 3n^2 - 11n + 3}{n-1} = 2n^2 + 5n - 6$ $D_f = R - \{1, \frac{1}{2}, -3\}$	ب) $2n^3 + 9n^2 + 10n + 3 \neq 0$ برابرت $\Rightarrow (n+1)$ بخش پذیر $\frac{2n^3 + 9n^2 + 10n + 3}{n+1} = 2n^2 + 7n + 3$ $D_f = R - \{-1, -\frac{3}{2}, -\frac{1}{2}\}$
الف) $n^3 - 2n^2 + 2n - 1 \neq 0$ جمع ضرایب صفر $\Rightarrow (n-1)$ بخش پذیر $\frac{n^3 - 2n^2 + 2n - 1}{n-1} = n^2 - n + 1$ $\Delta = 1 - 4 = -3 < 0$ $D_f = R - \{1\}$	ب) $\frac{n+3}{n^3 - 2n^2 + 2n - 1} \geq 0$ $D_f = (-\infty, -3] \cup (1, +\infty)$
$n^2 - 5 n-1 - 2n + 0 \neq 0$ $n > 1 \Rightarrow n^2 - 5n + 0 - 2n + 0 \neq 0$ $n^2 - 7n + 0 \neq 0$ $(n-7)(n-0) \neq 0$ $n \neq 7, 0$ $D_f = R - \{7, 0\}$	$n < 1 \Rightarrow n^2 + 3n \neq 0$ $n(n+3) \neq 0$ $n \neq 0, -3$ $D_f = R - \{0, -3\}$ $n = 1 \Rightarrow n^2 - 2n + 0 \neq 0$ $\Delta = 4 - 0 < 0$ $\Rightarrow$ ریشه ندارد و همیشه تعریف می شود.
الف) $[-n] - 2 \geq 0$ $[-n] \geq 2$ $2 \leq -n < +\infty$ $-2 \geq n > -\infty$ $D_f = (-\infty, -2]$	ب) $[n]^2 - 2[n] - 3 \neq 0$ $([n] + 1)([n] - 3) \neq 0$ $[n] \neq -1$ $[n] \neq 3$ $n \notin [-1, 0)$ $[n] \notin [3, 4)$ $\Rightarrow D_f = R - \{[-1, 0) \cup [3, 4)\}$
الف) $[n - \frac{1}{4}] + [n + \frac{2}{4}] \geq 0$ $[n - \frac{1}{4} + \frac{2}{4} - \frac{3}{4}] + [n + \frac{2}{4}] \geq 0$ $[n + \frac{1}{4}] - 1 + [n + \frac{2}{4}] \geq 0$ $2[n + \frac{1}{4}] \geq 1 \Rightarrow [n + \frac{1}{4}] \geq \frac{1}{2}$ $[n + \frac{1}{4}] \geq \frac{1}{2} \Rightarrow n + \frac{1}{4} \geq \frac{1}{2} \Rightarrow n \geq \frac{1}{4}$ $D_f = [\frac{1}{4}, +\infty)$	ب) $[n - \frac{1}{4}] + [\frac{1}{4} - n] \geq 0$ $[a] + [-a] \geq 0 \xrightarrow{\text{طبق تعریف}} a \in \mathbb{Z}$ $n - \frac{1}{4} \in \mathbb{Z}$ $n \in \mathbb{Z} + \frac{1}{4}$ $\Rightarrow D_f = \{n n = k + \frac{1}{4}, k \in \mathbb{Z}\}$

الف) $\tan \alpha + 1 \neq 0 \Rightarrow \tan \alpha \neq -1$ $\begin{cases} \cot = \frac{\cos}{\sin} \Rightarrow \sin \neq 0 \\ \tan = \frac{\sin}{\cos} \Rightarrow \cos \neq 0 \end{cases}$  $D_f = \mathbb{R} - \left\{ \frac{3\pi}{4}, \frac{7\pi}{4} \right\}$	ب) $1 - \sqrt{\sin \alpha} \geq 0$ $\begin{aligned} \sqrt{\sin \alpha} &\leq 1 \\ \sin \alpha &\leq \frac{1}{\epsilon} \\ -\frac{1}{\epsilon} &\leq \sin \alpha \leq \frac{1}{\epsilon} \end{aligned}$  $D_f = \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$
الف) $\sqrt{\sin \alpha} - 1 \geq 0$ $\begin{aligned} \sqrt{\sin \alpha} &\geq 1 \\ \sin \alpha &\geq \frac{1}{\epsilon} \end{aligned}$  $\Rightarrow D_f = \left[\frac{3\pi}{4}, \frac{5\pi}{4} \right]$	ب) $1 - \sqrt{\cos \alpha} \geq 0$ $\begin{aligned} \sqrt{\cos \alpha} &\leq 1 \\ \cos \alpha &\leq \frac{1}{\epsilon} \end{aligned} \Rightarrow D_f = \left[\frac{3\pi}{4}, \frac{5\pi}{4} \right]$ 
الف) $-1 \leq \sqrt{\alpha+1} \leq 1$ $\begin{aligned} 0 &\leq \alpha+1 \leq 1 & \alpha+1 &\leq 0 \\ 0 &\leq (\alpha+1)(\alpha+1) & \alpha(\alpha+1) &\leq 0 \\ \frac{-1}{+} &\frac{+}{-} & \frac{-}{+} &\frac{+}{-} \end{aligned}$ $\Rightarrow D_f = [-1, 0]$	ب) $-1 \leq \sqrt{\omega - \gamma \alpha} \leq 1$ $\begin{aligned} \omega - \gamma \alpha &\leq 1 \Rightarrow \alpha \geq \frac{\omega - 1}{\gamma} \\ \omega - \gamma \alpha &\geq 0 \Rightarrow \alpha \leq \frac{\omega}{\gamma} \end{aligned} \Rightarrow D_f = \left[\frac{\omega - 1}{\gamma}, \frac{\omega}{\gamma} \right]$
الف) $1 - \log_{\gamma} \alpha > 0 \quad \alpha > 0$ $\log_{\gamma} \alpha < 1 \Rightarrow \alpha < \gamma$ $D_f = (0, \gamma)$	ب) $1 - \log_{\frac{1}{\gamma}} \alpha > 0 \quad \alpha > 0$ $\log_{\frac{1}{\gamma}} \alpha < 1 \Rightarrow \alpha > \frac{1}{\gamma}$ $D_f = \left(\frac{1}{\gamma}, +\infty \right)$
الف) $\sqrt{\alpha - \alpha^2} - 1 \geq 0$ $\begin{aligned} \sqrt{\alpha - \alpha^2} &\geq 1 \\ \alpha - \alpha^2 &\geq 1 \\ 0 &\geq \alpha^2 - \alpha + 1 \\ 0 &\geq (\alpha - 1)(\alpha - 1) \end{aligned}$  $\Rightarrow D_f = [1, 3]$	ب) $\frac{\gamma \alpha + \omega}{\gamma \alpha + \gamma} \in \mathbb{W}_1$ $\alpha = -\frac{\gamma \omega - \omega}{\gamma \omega - \gamma} = -\frac{\gamma \omega + \omega}{\gamma \omega - \gamma}$ $\Rightarrow D_f = \left\{ \alpha \mid \alpha = \frac{-\gamma k + \omega}{\gamma k - \gamma}, k \in \mathbb{W}_1 \right\}$