

الف) $2n^3 + 3n^2 - 11n + 3 \mid n-1$ جمع ضرایب $\neq 0$ $\Rightarrow$ بر $n-1$ بخش پذیر است.

$$D_f = \mathbb{R} - \left\{ +\frac{1}{2}, -3 \right\}$$

$$2n^3 + 3n^2 - 11n + 3 \mid n-1 \Rightarrow (n^2 + 5n - 4) \mid n-1$$

$$\Rightarrow n = -3, -1/2 \leftarrow (n+4)(n-1)$$

ب) $2n^3 + 9n^2 + 10n + 3 \mid n+1$ جمع ضرایب $\neq 0$ $\Rightarrow$ بر $n+1$ بخش پذیر است.

$$D_f = \mathbb{R} - \left\{ -3, -1/2 \right\}$$

$$2n^3 + 9n^2 + 10n + 3 \mid n+1 \Rightarrow (2n^2 + 7n + 3) \mid n+1$$

$$\Rightarrow (2n+1)(n+3) \mid n+1$$

الف) $n^3 - 2n^2 + 2n - 1 \neq 0 \Rightarrow n^3 - 2n^2 + 2n - 1 \mid n-1$

$$n^3 - 2n^2 + 2n - 1 \mid n-1 \Rightarrow (n^2 - n + 1) \mid n-1$$

$$\Rightarrow (n-1)(n^2 - n + 1) \neq 0 \Rightarrow n \neq 1$$

ب) $\frac{n+3}{(n-1)(n^2 - n + 1)} \geq 0$ $\Rightarrow$ $n+3, n-1$ باید هم علامت باشند.

$$D_f = (-\infty, -3] \cup (1, +\infty)$$

الف) $[n] - 2 \geq 0 \Rightarrow [n] \geq 2 \Rightarrow -n = [2, +\infty) \Rightarrow n = (-\infty, -2]$

$$\Rightarrow D_f = (-\infty, -2]$$

ب) $[n] = 0 \Rightarrow n^2 - 2n - 3 \Rightarrow (n-3)(n+1) \neq 0 \Rightarrow n \neq 3, -1$

$$[n] \neq 3, [n] \neq -1 \Rightarrow D_f = \mathbb{R} - (-1, 0) \cup [3, 4)$$

الف) $[n - 1/2] + [n + 1/2] - 1 + 1 \rightarrow 2[n - 1/2] + 1 \geq 0 \rightarrow [n - 1/2] \geq -1/2$

$$n - 1/2 \geq -1 \rightarrow n \geq -1/2 \rightarrow D_f = [-1/2, +\infty)$$

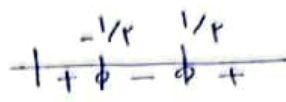
ب) $\sqrt{[m] + [-m]} \rightarrow [m] + [-m] \geq 0$

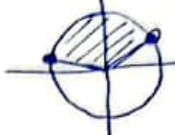
$$[m - 1/2] = [m]$$

$$m \in \mathbb{Z}$$

$n - 1/2 \in \mathbb{Z} \Rightarrow n \in \mathbb{Z} + 1/2$ $D_f = \{n \mid n = k + 1/2, k \in \mathbb{Z}\}$

الف) $\tan \theta \neq 0 \rightarrow \tan \theta \neq -1, \cos \theta \neq 0$  $\Rightarrow D_f = \mathbb{R} - \left[K\pi + \frac{\pi}{4} \right] \cup \left[K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4} \right]$

ب) $(1 - \sin \theta)(1 + \sin \theta) > 0$  
 $D_f = \mathbb{R} - \left(K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4} \right)$

الف) $\sin \theta > 1/r$ $\rightarrow \sin \theta > 1/r$  $\Rightarrow D_f = \left[K\pi + \frac{\pi}{4}, K\pi + \frac{5\pi}{4} \right]$

ب) $1 - \cos \theta > 0$ $\frac{1}{r} < \cos \theta$  $\Rightarrow D_f = \mathbb{R} - (K\pi - \frac{\pi}{4}, K\pi + \frac{\pi}{4})$

الف) $-1 \leq n^2 + 2n + 1 \leq 1 \rightarrow n^2 + 2n \leq 0 \rightarrow n(n+2) \leq 0$
 $\frac{-r}{+} \frac{0}{-} \frac{+}{+} \rightarrow [-r, 0]$
 $0 \leq n^2 + 2n + 2$
 $D_f = [-r]$
 $0 \leq (n+1)(n+3) \rightarrow \frac{-r}{+} \frac{1}{+} \frac{+}{+} \rightarrow (-\infty, -r] \cup [1, +\infty)$

الف) $1 - \log \frac{n}{r} > 0 \rightarrow 1 > \log \frac{n}{r} \rightarrow \log \frac{n}{r} < 1$
 $\log \frac{1/n}{r} < 1 \rightarrow \frac{1}{n} > 1/r \rightarrow n < r$
 $D_f = (0, r)$
 ب) $\log \frac{n}{1/r} < 1 \xrightarrow{\text{دفعه}} \log \frac{n}{1/r} < 1 \rightarrow \frac{n}{1/r} < r \rightarrow n < 1/r$
 $D_f = (1/r, +\infty)$

الف) $r^{Fn - n^2} - 1 > 0 \rightarrow r^{Fn - n^2} > 1 \rightarrow Fn - n^2 > 0$
 $\frac{1}{+} \frac{0}{+} \frac{r}{+} \rightarrow n^2 - Fn + 2 \leq 0 \rightarrow (n-1)(n-2) \leq 0$
 $D_f = [1, 2]$

ب) $\frac{r_{n+d}}{r_{n+f}} \in \mathbb{W} \Rightarrow n = -\frac{r_{w-d}}{r_{w-f}} \rightarrow n = \frac{-r_{w+d}}{r_{w-f}}$

$D_f = \left\{ n \mid n = \frac{-r_{K+d}}{r_{K-f}}, K \in \mathbb{W} \right\}$