

الف) $(n+3) R = -3$

$(n-1)(n^2 + \Delta n - 3) \Rightarrow D_f = 1R - \left\{ \frac{1}{-3}, \frac{1}{-1} \right\}$

ب) $(n+3) \Rightarrow R = -3$

$R = -1 \Rightarrow (n+1)(n^2 + \Delta n + 3) \Rightarrow R = -3, -\frac{1}{-1}$

الف) $n = 3$

$R = 1 \Rightarrow (n-1)(n^2 - n + 1) \rightarrow R = \textcircled{X} \Rightarrow D_f = 1R - \left\{ 1, \frac{1}{2} \right\}$

ب) $n+3 \Rightarrow R = -3$

$R = 1 \Rightarrow \sqrt{(n-1)(n^2 - n + 1)} \Rightarrow D_f = 1R - (-3, 1]$

$n^2 - \Delta |n-1| - \Delta n + \Delta \neq 0 \Rightarrow n^2 - \Delta n + \Delta \neq \Delta n - \Delta$

$\Rightarrow n^2 - \Delta n + 1 \neq 0$

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

If $n < 1 \Rightarrow n^2 - \Delta n + \Delta \neq \Delta - \Delta n \Rightarrow n^2 + \Delta n \neq 0$

$\Rightarrow n(n+3) \neq 0 \Rightarrow n \neq 0, -3$

$\Rightarrow D_f = 1R - \left\{ -3, 2, \Delta, 0 \right\}$

الف) $\left[\frac{-n}{A} \right] > 1 \Rightarrow A > 1 \Rightarrow -n > 1 \Rightarrow n < -2$

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

ب) $\left[\frac{n}{A} \right] - 1 \left[\frac{n}{A} \right] - 3 \neq 0 \Rightarrow \det \left[\frac{n}{A} \right] = 2 \Rightarrow \left[\frac{n}{A} \right] - 2 \neq 0$

$\Rightarrow (x-3)(x+1) \neq 0 \Rightarrow x \neq -1, 3 \Rightarrow$

$\Rightarrow D_f = 1R - ([-1, 0) \cup [3, 4])$

الف) $\left[n - \frac{1}{n} \right] = \left[n + \frac{1}{n} \right] - 1 \Rightarrow 1 \left[n + \frac{1}{n} \right] > 1 \Rightarrow \left[n + \frac{1}{n} \right] > \frac{1}{n}$

$\Rightarrow A > 1 \Rightarrow n + \frac{1}{n} > 1 \Rightarrow n > \frac{1}{n} \Rightarrow \left[\frac{1}{n}, +\infty \right)$

$$\begin{aligned} \text{c) Let } n - \frac{1}{r} = \ell &\Rightarrow [\ell] + [-\ell] \}_0 \Rightarrow \ell \in \mathbb{Z} \\ \Rightarrow \frac{n-1}{r} \in \mathbb{Z} &\Rightarrow n \in \frac{r\mathbb{Z}+1}{r} \Rightarrow D_f = \left\{ n \mid n \in \frac{r\mathbb{Z}+1}{r} \right\} \end{aligned}$$

الف) $\cos n, \tan n = \text{Defined}, \tan n \neq -1 \Rightarrow \left[\frac{\pi}{2}, \frac{3\pi}{2} \right] \setminus \left\{ \frac{3\pi}{2} \right\}$
 ب) $1 > \sin n \Rightarrow \frac{1}{e} > \sin n \Rightarrow \frac{1}{e} < \sin n < \frac{1}{e}$

$$\begin{aligned} \text{a)} \quad & \rho(\sin \alpha) \geq 1 \Rightarrow \sin \alpha \geq \frac{1}{\rho} \Rightarrow \left[\rho k\pi + \frac{\pi}{9}, \rho k\pi + \frac{8\pi}{9} \right] \\ \text{b)} \quad & 1 \geq \rho(\cos \alpha) \Rightarrow \frac{1}{\rho} \geq \cos \alpha \Rightarrow \left[\rho k\pi + \frac{\pi}{\rho}, \rho k\pi + \frac{\pi}{\rho} \right] \end{aligned}$$

$-1 \leq \sqrt{a - r_n} \leq 1 \Rightarrow \sqrt{a - r_n} \leq 1 \Rightarrow a - r_n \leq 1 \Rightarrow r_n \geq a - 1$
 $\Rightarrow \sqrt{a - r_n} \geq -1 \Rightarrow a - r_n \geq 1 \Rightarrow r_n \leq a + 1$
 $\Rightarrow -1 \leq \sqrt{a - r_n} \leq 1 \Rightarrow r_n \in [a - 1, a + 1]$
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 $\Rightarrow -1 \leq \sqrt{a - r_n} \leq 1 \Rightarrow r_n \in [a - 1, a + 1]$

ا) $n > 0, 1 - \log_2 \frac{n}{r} > 0 \Rightarrow 1 > \log_2 \frac{n}{r} \Rightarrow r > n \xrightarrow{D_f} (0, r)$
 ب) $n > 0, 1 - \log_2 \frac{n}{r} > 0 \Rightarrow 1 > \log_2 \frac{n}{r} \Rightarrow r > n \xrightarrow{D_f} (0, r)$
 $\Rightarrow D_f = \left(\frac{1}{r}, \infty \right) + \infty$

$$\begin{aligned} \text{الف) } r(f_{n-2r}) > 1 &\Rightarrow r(f_{n-2r}) > r \Rightarrow f_{n-2r} > r \\ \Rightarrow n^2 - f_n + r < 0 &\Rightarrow (n-r)(n-1) < 0 \Rightarrow \frac{1}{n-1} < \frac{1}{n} \\ \Rightarrow \frac{r_{n+\Delta}}{r_{n+r}} \in W &\Rightarrow -\frac{r_{W-\Delta}}{r_{W-r}} \in n \Rightarrow D_f = [1, r] \\ \Rightarrow D_f = \{ n \mid n \in \frac{\Delta - r_{W-r}}{r_{W-r}} \} \end{aligned}$$