

الف) $f = \frac{n+c}{2n^2+c^2n^2-2n+c} \neq 0 \rightarrow (n-1) \dots$
 $\rightarrow = (n-1)(2n^2+c^2n^2-2n+c) \neq 0 \rightarrow (n-1)(n+c)(n-\frac{1}{c})$
 $\rightarrow D_f = \mathbb{R} - \left\{ -c, \frac{1}{c} \right\}$

ب) $2n^2+9n^2+10n+c \neq 0 \rightarrow (n+1) \dots \rightarrow 2n^2+9n^2+10n+c \neq 0$
 $\rightarrow = (n+1)(2n^2+9n^2+10n+c) \neq 0 \rightarrow (n+1)(n+c)(n+\frac{1}{c})$
 $\rightarrow D_f = \mathbb{R} - \left\{ -\frac{1}{c}, -c \right\}$

الف) $2n^2-2n^2+2n-1 \neq 0 \rightarrow (n-1)(n^2-n+1)$
 $\rightarrow D_f = \mathbb{R} - \left\{ 1 \right\}$

ب) $y = \sqrt{\frac{n+c}{n^2-2n^2+2n-1}} \geq 0 \rightarrow \frac{n+c}{(n-1)(n^2-n+1)} \geq 0$
 $\rightarrow \frac{-c}{+ \frac{1}{-} - \frac{1}{+}} \rightarrow D_f = (-\infty, -c] \cup (1, +\infty)$

$f = \frac{r}{n^2-d|n-1|-2n+d} \rightarrow$
 ① $n \geq 1 \rightarrow n^2-dn+d-2n+d \neq 0$
 $\rightarrow n^2-(d+2)n+2d \neq 0 \rightarrow (n-d)(n-2) \neq 0 \rightarrow n \neq \{2, d\}$
 ② $n \leq 1 \rightarrow n^2-d+2n-2n+d \neq 0 \rightarrow n^2+c \neq 0 \rightarrow n \neq \{0, -c\}$
 $\rightarrow D_f = \mathbb{R} - \left\{ -c, 2, d \right\}$

الف) $[-n]-2 \geq 0 \rightarrow [n] \geq 2 \rightarrow -n \geq 2 \rightarrow n \leq -2$
 $\rightarrow D_f = (-\infty, -2]$

ب) $[n]^2-2[n]-c \neq 0 \rightarrow t^2-2t-c \neq 0 \rightarrow (t-c)(t+1) \neq 0 \rightarrow t \neq \{c, -1\}$
 $t \neq -1 \rightarrow [n] \neq -1 \rightarrow n \notin [-1, 0)$
 $t \neq c \rightarrow [n] \neq c \rightarrow n \notin [c, c+1)$
 $\rightarrow D_f = \mathbb{R} - [-1, 0) \cup [c, c+1)$

الف) $[n-\frac{1}{c}] + [n+\frac{1}{c}] \geq 0 \rightarrow [n+\frac{1}{c}] + [n+\frac{1}{c}] \geq 1 \rightarrow [2n+\frac{2}{c}] \geq 1$
 $\rightarrow [n+\frac{1}{c}] \geq \frac{1}{2} \rightarrow [n+\frac{1}{c}] \geq 1 \rightarrow n+\frac{1}{c} \geq 1 \rightarrow n \geq 1-\frac{1}{c}$
 $\rightarrow D_f = [\frac{1}{c}, +\infty)$

ب) $\sqrt{[n-\frac{1}{c}] + [n+\frac{1}{c}]} = [t] + [t] \geq 0 \rightarrow t \in \mathbb{Z} \rightarrow (n-\frac{1}{c}) \in \mathbb{Z}$
 $n = \mathbb{Z} + \frac{1}{c} \rightarrow D_f = \left\{ n \mid n = k + \frac{1}{c}, k \in \mathbb{Z} \right\}$

$$a) f: \frac{\cos(x+1)}{\tan(x+1)} \rightarrow \begin{cases} \cos(x+1) \neq 0 \rightarrow x \neq \left\{ \frac{K\pi}{2} \right\} \\ \sin(x+1) \neq 0 \rightarrow x \neq \left\{ K\pi + \frac{\pi}{2} \right\} \end{cases}$$

$$\rightarrow D_f: \mathbb{R} - \left\{ \frac{K\pi}{2} \right\} - \left\{ K\pi + \frac{\pi}{2} \right\} \quad \mathbb{C}_f$$

$$b) 1 - \varepsilon \sin x \geq 0 \rightarrow \frac{1}{\varepsilon} \geq \sin x \rightarrow \frac{1}{\varepsilon} \geq \sin x \geq -\frac{1}{\varepsilon} \rightarrow x \in \left[K\pi - \frac{\pi}{\varepsilon}, K\pi + \frac{\pi}{\varepsilon} \right]$$

$$\rightarrow D_f: \left[K\pi - \frac{\pi}{\varepsilon}, K\pi + \frac{\pi}{\varepsilon} \right] \quad \mathbb{C}_f$$

$$a) 2 \sin x = 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2} \rightarrow x \in \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right]$$

$$\rightarrow D_f: \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right] \quad \mathbb{C}_f$$

$$b) 1 - 2 \cos x \geq 0 \rightarrow \frac{1}{2} \geq \cos x \rightarrow \left[2K\pi + \frac{\pi}{3}, 2K\pi + \frac{5\pi}{3} \right]$$

$$\rightarrow D_f: \left[2K\pi + \frac{\pi}{3}, 2K\pi + \frac{5\pi}{3} \right] \quad \mathbb{C}_f$$

$$a) 1 \geq n^2 + cn + 1 \geq -1 \rightarrow \textcircled{1} n^2 + cn + 2 \geq 0 \rightarrow (n+1)(n+2) \geq 0$$

$$\rightarrow n \in (-\infty, -2] \cup [-1, +\infty) \rightarrow \textcircled{2} n^2 + cn \geq 0 \rightarrow n = [-c, 0]$$

$$\textcircled{1} \cap \textcircled{2} \rightarrow D_f: [-c, -2] \cup [-1, 0] \quad \mathbb{C}_f$$

$$b) 1 - \sqrt{\omega - 2n} \geq -1 \rightarrow \omega - 2n \leq 1 \rightarrow \left. \begin{matrix} \omega - 2n \geq 0 \rightarrow n \leq \frac{\omega}{2} \\ 2 \leq n \end{matrix} \right\} \rightarrow 2 \leq n \leq \frac{\omega}{2}$$

$$\rightarrow D_f: [2, \frac{\omega}{2}] \quad \mathbb{C}_f$$

$$a) f: \log_f^{(1-\log_f^n)} \rightarrow \underline{n} \geq 0 \rightarrow 1 - \log_f^n > 0 \rightarrow 1 > \log_f^n$$

$$\rightarrow x < c' \rightarrow \underline{n} < c \rightarrow D_f: (0, c) \quad \mathbb{C}_f$$

$$b) f: \log_f^{(1-\log_f^n)} \rightarrow \underline{n} \geq 0 \rightarrow 1 - \log_f^n > 0 \rightarrow 1 > \log_f^n$$

$$\rightarrow n > (\frac{1}{f}) \rightarrow \underline{n} > \frac{1}{f} \rightarrow D_f: (\frac{1}{f}, +\infty) \quad \mathbb{C}_f$$

$$a) 2^{n^2 - cn} - 2^c \geq 0 \rightarrow 2^{n^2 - cn - c} \geq 1 \rightarrow -(n^2 - cn + c) \geq 0$$

$$\rightarrow -(n^2 - cn + c) \geq 0 \rightarrow \frac{+1}{-1} + \frac{+c}{-1} \rightarrow D_f: [1, c] \quad \mathbb{C}_f$$

$$b) f: \left(\frac{cn+d}{rn+\varepsilon} \right)! \rightarrow \begin{cases} rn+\varepsilon \neq 0 \rightarrow n \neq -\frac{\varepsilon}{r} \\ (c)! \rightarrow c \in \mathbb{W} \end{cases} \rightarrow \frac{cn+d}{rn+\varepsilon} \in \mathbb{W}$$

$$\rightarrow -\frac{\varepsilon W - d}{rn - c} = n \rightarrow D_f: \left\{ n \mid n = \frac{d - \varepsilon K}{rn - c}, K \in \mathbb{W} \right\}$$