

الف) $\frac{n+3 \rightarrow -3}{(n-1)(2n^2+5n-3)} \rightarrow 2n^2+5n-3=0 \quad \frac{-5 \pm \sqrt{25+24}}{2} \rightarrow \frac{1}{2} \rightarrow -3$
 $D_f = \mathbb{R} - \{-3, \frac{1}{2}, 1\}$

ب) $\frac{n+3 \rightarrow -3}{(n+1)(2n^2+7n+3)} \rightarrow 2n^2+7n+3=0 \rightarrow n^2+7n+6=0 \rightarrow (n+1)(n+6)=0$
 $D_f = \mathbb{R} - \{-3, -1, -\frac{1}{2}\}$

الف) $\frac{n+3}{(n-1)(n^2-n+1)} \rightarrow D_f = \mathbb{R} - \{1\}$

ب) $\frac{n+3 \rightarrow -3}{(n-1)(n^2-n+1)} \geq 0 \quad \frac{-3}{+ \quad - \quad +} \quad D_f = (-\infty, -3] \cup (1, +\infty)$

if: $n \geq 1 \quad \frac{2}{n^2-5n+5-2n+5} \rightarrow \frac{2}{n^2-7n+10} \rightarrow \frac{2}{(n-2)(n-5)}$

if: $n < 1 \quad \frac{2}{n^2+5n-5-2n+5} \rightarrow \frac{2}{n^2+3n} = \frac{2}{n(n+3)}$
 $D_f = \mathbb{R} - \{-3, 0, 2, 5\}$

الف) $[-n]-2 \geq 0 \rightarrow [-n] \geq 2 \rightarrow n \leq -2$

ب) $\frac{5n^2+6}{[n]^2-2[n]-3} \rightarrow \frac{5n^2+6}{([n]-3)([n]+1)}$
 $D_f = \mathbb{R} - \{[3, 4) \cup [-1, 0)\}$
 $3 \leq n < 4 \quad -1 \leq n < 0$

الف) $\sqrt{[n+\frac{1}{2}]-1} + [n+\frac{1}{2}] \geq 0 \quad [n+\frac{1}{2}] + [n+\frac{1}{2}] \geq 1 \quad [n+\frac{1}{2}] \geq \frac{1}{2}$
 $[n+\frac{1}{2}] \geq 1 \quad 1 \leq n+\frac{1}{2} < 2 \quad 2[n+\frac{1}{2}]$
 $\frac{1}{2} \leq n < \frac{3}{2} \quad D_f = [\frac{1}{2}, \frac{3}{2})$

ب) $\sqrt{[n-\frac{1}{2}]} + [\frac{1}{2}-n] \rightarrow [-(n-\frac{1}{2})] \quad n - \frac{1}{2} \in \mathbb{Z} \quad D_f = \{n | n = k + \frac{1}{2}, k \in \mathbb{Z}\}$

الف) $\frac{\cos n}{\sin n} + 1$ $\sin n \neq 0, \cos n \neq 0, \tan n \neq -1$ $\frac{\sin n}{\cos n} + 1$ $\hookrightarrow n \neq \pi/2, 3\pi/2$ $D_f = \mathbb{R} - \left\{ \frac{k\pi}{r}, r k \pi + \frac{\pi}{r}, r k \pi - \frac{\pi}{r} \right\}$ ب) $1 - \epsilon \lim n \geq 0 \rightarrow \epsilon \lim n \leq 1 \quad \lim n \leq \frac{1}{\epsilon} \quad \frac{1}{r} \leq \lim n \leq \frac{1}{r}$ $D_f = \left\{ \left[k\pi + \frac{\pi}{r}, k\pi + \frac{\pi}{r} \right] \right\}$	٦
الف) $r \lim n - 1 \geq 0 \rightarrow \lim n \geq \frac{1}{r} \quad D_f = \left[r k \pi + \frac{\pi}{r}, r k \pi + \frac{\pi}{r} \right]$ ب) $1 - r \cos n \geq 0 \quad \frac{1}{r} \geq \cos n$ $D_f = \left[r k \pi + \frac{\pi}{r}, r k \pi - \frac{\pi}{r} \right]$	٧
الف) $-1 \leq n^r + r n + 1 \leq 1 \rightarrow n^r + r n \leq 0$ $\frac{-r}{+b-b+} \quad \frac{-r}{+b-b+}$ $\rightarrow n^r + r n + r \geq 0 \rightarrow (n+r)(n+r) \geq 0$ $(I) [-r, 0] \quad (II) (-\infty, -r) \cup [-1, +\infty) \quad I \cap II \rightarrow [-r, -r] \cup [-1, 0]$ ب) $0 \leq \sqrt{\omega - r n} \leq 1 \rightarrow 0 \leq \omega - r n \leq 1$ $0 \leq \omega - r n \leq 1 \quad -1 \leq \omega - r n \leq 1 \quad -r \leq -r n \leq -r$ $r \leq n \leq r$ $D_f = [r, r]$	٨
الف) $1 - \log_r^n > 0 \quad 1 > \log_r^n \rightarrow n < r, n > 0$ $D_f = 0 < n < r \quad (0, r)$ ب) $1 - \log_{\frac{1}{r}}^n > 0 \quad 1 > \log_{\frac{1}{r}}^n \rightarrow n > \frac{1}{r} \quad n > 0$ $D_f = \left(\frac{1}{r}, +\infty \right)$	٩
$r^{f n - n^r} \geq r^r \quad f n - n^r \geq r \quad n^r + r - f n \leq 0$ $(n-1)(n-r) \leq 0 \quad \frac{1}{+b-b+} \rightarrow D_f = [1, r]$ ب) $\frac{r n + \omega}{r n + r} \in \mathbb{W} \quad n \in -\frac{r \omega - \omega}{r \omega - r}$ $D_f = \left\{ n \mid n = \frac{-r k + \omega}{r k - r}, k \in \mathbb{W} \right\}$	١٠