

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

ب) $\frac{n+3}{(n+1)(2n^2+7n+3)}$ $2n^2+7n+3=0 \rightarrow n^2+7n+4=0 \rightarrow (n+1)(n+4) \rightarrow -1, -4$
 $D_f \rightarrow \mathbb{R} - \{-1, -\frac{1}{2}, -3\}$

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

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

if $\rightarrow n \geq 1 \rightarrow \frac{n^2-5n+5-2n+5}{n^2-5n+10} \rightarrow \frac{1}{(n-1)(n-5)}$
 if $\rightarrow n < 1 \rightarrow \frac{n^2+3n}{n^2+3n} \rightarrow 0, -3$
 $D_f = \mathbb{R} - \{-3, 0, 2, 5\}$

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

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

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

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

$D_f = \{n | n = k + \frac{1}{2}, k \in \mathbb{Z}\}$

الف) $\frac{\cos x}{\sin x} + 1$ $\frac{\sin x}{\cos} x + 1$ ب) $1 - \sqrt{2} \sin^2 x \geq 0 \rightarrow \sqrt{2} \sin^2 x \leq 1 \rightarrow \sin^2 x \leq \frac{1}{\sqrt{2}} \rightarrow \frac{1}{\sqrt{2}} \leq \sin x \leq \frac{1}{\sqrt{2}}$ $D_f \rightarrow \left\{ \left[k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right] \right\}$	$\sin x \neq 0$ $\cos x \neq 0$ $\tan x \neq -1$ $x \neq 135^\circ, 315^\circ$ $D_f: \mathbb{R} - \left\{ \frac{k\pi}{\sqrt{2}}, k\pi - \frac{\pi}{\sqrt{2}}, k\pi + \frac{\pi}{\sqrt{2}} \right\}$	6
الف) $\sqrt{2} \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{\sqrt{2}}$ ب) $1 - \sqrt{2} \cos x \geq 0 \rightarrow \frac{1}{\sqrt{2}} \geq \cos x$ $D_f = \left[\sqrt{2}k\pi + \frac{\pi}{4}, \sqrt{2}k\pi + \frac{3\pi}{4} \right]$ $D_f = \left[\sqrt{2}k\pi + \frac{\pi}{\sqrt{2}}, \sqrt{2}k\pi - \frac{\pi}{\sqrt{2}} \right]$	$D_f = \left[\sqrt{2}k\pi + \frac{\pi}{4}, \sqrt{2}k\pi + \frac{3\pi}{4} \right]$	7
الف) $-1 \leq x^2 + x + 1 \leq 1$ $I \cap II \rightarrow [-\sqrt{3}, -\frac{1}{2}] \cup [-\frac{1}{2}, 0]$ ب) $0 \leq \sqrt{a-x} \leq 1 \rightarrow 0 \leq a-x \leq 1$ $0 \leq a-x \checkmark$ $-1 \leq a-x \leq 1 \rightarrow -\frac{1}{2} \leq x \leq -\frac{1}{2}$	$x^2 + x \leq 0$ $x^2 + x + 1 \geq 0$ $(x+1)(x+2)$ $\frac{-x}{+1-0+} = [-\frac{1}{2}, 0]$ $\frac{-x}{+1-0+} = [-\frac{1}{2}, 0] \cup [1, +\infty)$ $D_f \rightarrow [-\frac{1}{2}, \frac{1}{2}]$ $\frac{1}{2} \geq x \geq \frac{1}{2}$	8
الف) $1 - \log_{\sqrt{2}} x > 0 \rightarrow 1 > \log_{\sqrt{2}} x \rightarrow x < \sqrt{2}, x > 0$ $D_f \rightarrow 0 < x < \sqrt{2} \quad (0, \sqrt{2})$ ب) $1 - \log_{\frac{1}{\sqrt{2}}} x > 0 \rightarrow 1 > \log_{\frac{1}{\sqrt{2}}} x \rightarrow x > \frac{1}{\sqrt{2}}, x > 0$ $D_f \rightarrow (\frac{1}{\sqrt{2}}, +\infty)$		9
الف) $\sqrt[n]{n-n^2} \geq \sqrt[n]{n^2}$ $D_f = [1, \sqrt{2}]$ ب) $\frac{n+n\omega}{n+n\epsilon} \in \mathbb{W} \rightarrow n \in \left(-\frac{\epsilon\omega - \omega}{\epsilon\omega - \epsilon} \right)$ $D_f = \left\{ n \mid n = \frac{-\epsilon k + \omega}{\epsilon k - \epsilon}, k \in \mathbb{W} \right\}$	$x^2 + x - \epsilon n \leq 0 \rightarrow (x-1)(x-\sqrt{2})$ $\frac{1}{+1-0+} = [1, \sqrt{2}]$	10