

$\cot$ نه $k\pi$ و $k\pi + \pi$ تعريف نئي ملوڻ
 $\frac{\cot x + 1}{\tan x + 1} \rightarrow$ (الف)

$$D_f: \mathbb{R} - \left\{ \frac{k\pi}{\gamma}, k\pi \frac{\pi}{\gamma} \right\}$$

$$\rightarrow \sqrt{1 - \frac{1}{5} \sin^2 \alpha} \rightarrow 1 - \frac{1}{5} \sin^2 \alpha \geq 0 \rightarrow 1 \geq \frac{1}{5} \sin^2 \alpha \rightarrow \frac{1}{5} \geq \sin^2 \alpha \rightarrow \frac{1}{\sqrt{5}} \geq \sin \alpha \geq -\frac{1}{\sqrt{5}}$$

$$D_f: [k\pi - \frac{\pi}{4} \quad k\pi + \frac{\pi}{4}]$$

الف) $\sqrt{2\sin\alpha - 1} \rightarrow 2\sin\alpha - 1 \geq 0 \rightarrow \sin\alpha \geq \frac{1}{2} \rightarrow D_f: [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

$$\therefore \sqrt{1 - \cos \alpha} \rightarrow 1 - \cos \alpha \geq 0 \rightarrow 1 \geq \cos \alpha \rightarrow \frac{1}{\gamma} \geq \cos \alpha \rightarrow D_f: \mathbb{R} - \left(\cancel{\gamma + \frac{\pi}{\gamma}} \mid \gamma + \frac{\pi}{\gamma} \right)$$

$$\text{الف) } \arcsin(x + \frac{r}{r}) \rightarrow -1 \leq x + \frac{r}{r} \leq 1 \xrightarrow{+\frac{r}{r}} \frac{1}{r} \leq (x + \frac{r}{r})^r \leq \frac{9}{r}$$

$$\frac{1}{r} \leq x + \frac{r}{r} \leq \frac{r}{r} \rightarrow -1 \leq x \leq 0 \quad \{ D_f: [-1, 0] \cup [r, r] \}$$

$$-\frac{1}{y} \geq x + \frac{y}{y} \geq -\frac{y}{y} \rightarrow -y \geq x \geq -y$$

$$\begin{aligned} \cos y = \sqrt{\omega - y_n} \rightarrow -1 \leq \sqrt{\omega - y_n} \leq 1 \rightarrow \sqrt{\omega - y_n} \leq 1 \rightarrow \omega - y_n \leq 1 \rightarrow y \leq y_n = \\ \omega - y_n \geq 0 \rightarrow \omega \geq y_n \rightarrow y, \omega \geq n \quad D_f: [y, \omega] \end{aligned}$$

الف) $y = \log_r(1 - \log_r^n)$ $\rightarrow$ $\begin{cases} ① x > 0 \\ ② 1 - \log_r^n > 0 \rightarrow 1 > \log_r^n \rightarrow r > n \end{cases} \quad \left. \begin{matrix} r > n > 0 \\ D_f: [0, r) \end{matrix} \right\} \quad \text{P}$

ب) $\log_r (1 - \log \frac{n}{r})$ ① $n > 0$
 $\rightarrow$ ② $\log \frac{n}{r} > 0 \rightarrow 1 > \log \frac{n}{r} \rightarrow \frac{1}{r} < n \}$ $D_f: (\frac{1}{r}, \infty)$

(اف) $\sqrt{\frac{y^{2n-n^r}}{y^3-1}} \rightarrow y^{2n-n^r} - 1 \geq 0 \rightarrow y^{2n-n^r} \geq y^3 \rightarrow 2n-n^r \geq 3 \rightarrow n^r - 2n + 3$
 $\frac{+}{-} \frac{-}{+} \rightarrow D_f, [1, 3]$

$$\vdash) \gamma = \left(\frac{\gamma_{n+\omega}}{\gamma_{n+\omega}} \right)! \rightarrow \frac{\gamma_{n+\omega}}{\gamma_{n+\omega}} \in W \rightarrow \gamma_{n+\omega} \in \gamma_{n+\omega} \rightarrow \gamma_{n+\omega} \in \gamma_{n+\omega} \rightarrow \gamma_{n+\omega} \in \gamma_{n+\omega}$$