

الف) $\frac{\cos \eta + 1}{\tan \eta + 1}$



$\tan \eta + 1 \neq 0$

$\tan \eta \neq -1$

$\frac{\sin}{\cos} > 0$

$D = R - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$

ب) $\sqrt{1 - \epsilon \sin^2 \eta}$

$1 - \epsilon \sin^2 \eta \geq 0$

$-\frac{1}{\epsilon} \leq \sin^2 \eta \leq \frac{1}{\epsilon}$

$D = \left[k\pi + \frac{\pi}{4}, k\pi - \frac{\pi}{4} \right]$



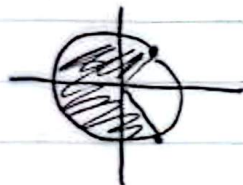
ج) $\sqrt{\psi \sin \eta - 1} \rightarrow \psi \sin \eta - 1 \geq 0 \rightarrow \sin \eta \geq \frac{1}{\psi}$



$D = \left[\psi k\pi + \frac{\pi}{4}, \psi k\pi + \frac{5\pi}{4} \right]$

د) $\sqrt{1 - \psi \cos \eta}$

$1 - \psi \cos \eta \geq 0 \rightarrow \cos \eta \leq \frac{1}{\psi}$



$D = \left[\psi k\pi + \frac{\pi}{2}, \psi k\pi + \frac{3\pi}{2} \right]$

هـ) $\arcsin(\eta^2 + \psi \eta + 1)$

$-1 \leq \eta^2 + \psi \eta + 1 \leq 1$

$\frac{-\psi}{2} \leq \eta \leq \frac{-\psi - 1}{2}$



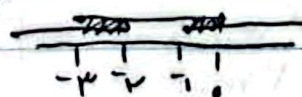
$\eta^2 + \psi \eta + 1 \leq 1$

$\eta^2 + \psi \eta + 1 \geq -1$

$\eta(\eta + \psi) \leq 0 \rightarrow [-\psi, 0]$

$-\frac{\psi}{2}$

$D = [-\psi, -\psi] \cup [-1, 0]$



$$\text{بـ) } \cos y = \sqrt{\omega - r_n}$$

$$\omega - r_n \geq 0$$

$$n \leq \frac{\omega}{r}$$

$$-1 \leq \sqrt{\omega - r_n} \leq 1$$

$$\omega - r_n \leq 1$$

$$n \geq r$$

$$D = \left[r, \frac{\omega}{r} \right]$$

$$\text{بـ) } \log_r (1 - \log_r^n)$$

$$1 - \log_r^n > 0 \rightarrow \log_r^n < 1 \rightarrow n < r^0$$

$$n > 0$$

$$D = (0, r)$$

$$\text{بـ) } \log_r (1 - \log_{\frac{1}{r}}^n)$$

$$1 - \log_{\frac{1}{r}}^n > 0 \rightarrow \log_{\frac{1}{r}}^n < 1$$

$$n < \frac{1}{r^0}$$

$$n > 0$$

$$D = \left(\frac{1}{r}, 0 \right)$$

$$\text{الف) } \sqrt{r^{r_n - n^r} - 1}$$

$$r^{r_n - n^r} \geq 1$$

$$r^{r_n - n^r} - 1 \geq 0$$

$$r^{r_n - n^r} \geq r \rightarrow n^r - r_n + r \leq 0$$

$$(n - r)(n - 1)$$

$$\frac{1}{r} \leq \frac{1}{r - 1}$$

$$D = [1, r]$$

$$\text{بـ) } \left(\frac{r_n + \omega}{r_n + r} \right) ! \quad \frac{r_n + \omega}{r_n + r} \in W$$

$$\Rightarrow n = \frac{r_w + \omega}{r_w - r} \quad D = \left\{ n \mid n = \frac{\omega - rk}{r - r}, k \in W \right\}$$