

۱۸/۵ سوالی که فرستید با دقت مطالعه شود! جزوه بغیر دانسته شدن سؤالی را دوباره بفرست!

$$y = \frac{x+3}{(x^2 + \omega x - 1)(x-1)} = \frac{D}{(x^2 + \omega x - 1)(x-1)}$$

$$D = 1R - \left[\begin{matrix} 1 & 3 \\ 0 & -1 \end{matrix} \right] = \begin{matrix} 1 & 3 \\ 0 & -1 \end{matrix}$$

$$x^2 + \omega x - 1 = 0 \rightarrow (x-1)(x+1) = 0 \rightarrow x = 1, -1 \rightarrow x = \frac{1}{2} \rightarrow -\frac{1}{2}$$

$$D = \{R - \{1\}\} \quad \text{D}$$

$$y = \frac{r}{x^r - \omega|x-1| - rx + \omega} \rightarrow \begin{aligned} &x \geq 1 \rightarrow x^r - \omega|x-1| - rx + \omega \rightarrow x^r - Vx + 1 = 0 \rightarrow (x-r)(x-\omega) = 0 \\ &\hspace{15em} x = r, \omega \quad \leftarrow \\ &x \leq 1 \rightarrow x^r + \omega|x-1| - rx + \omega \rightarrow x^r + rx = 0 \rightarrow x(x+r) = 0 \\ &\hspace{15em} x = 0, -r \end{aligned}$$

$$\mathcal{D}_f = \mathbb{R} - \{ -r, 0, r, \omega \} \quad \text{D}$$

الف) $y = \sqrt{[-x]} - 2 \rightarrow [-x] - 2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow x \leq -2 \rightarrow D = (-\infty, -2]$

$$\begin{aligned} \text{b.) } y &= \frac{\omega x^r + c}{[x]^r - r[x]^{r-1}} \\ a+c &= b \\ [x] &= x^r - 1 \rightarrow [x] = x^r \rightarrow x^r \leq x < x^r + 1 \quad | \quad [x] = -1 \rightarrow -1 \leq x < 0 \end{aligned}$$

$$(b) y = \sqrt{\left[x - \frac{1}{\mu}\right] + \left[x + \frac{1}{\epsilon}\right]} \Rightarrow \left[x - \frac{1}{\mu}\right] + \left[x + \frac{1}{\epsilon}\right] \geq 0 \rightarrow \left[x - 1 + \frac{1}{\epsilon}\right] + \left[x + \frac{1}{\epsilon}\right] \geq 0 \rightarrow 2\left[x + \frac{1}{\epsilon}\right] \geq 1$$

$$Df = \left[\frac{1}{2}, +\infty\right) \leftarrow x \geq \frac{1}{\mu} \leftarrow x + \frac{1}{\epsilon} \geq 1 \quad \begin{matrix} \xrightarrow{\text{sub}} \\ \text{①} \end{matrix} \quad \begin{matrix} \xrightarrow{\text{sub}} \\ \text{②} \end{matrix} \quad \left[x + \frac{1}{\mu}\right] \geq \frac{1}{\mu}$$

$$\therefore y = \sqrt{\left[x - \frac{1}{4}\right] + \left[\frac{1}{4} - x\right]} = \sqrt{\left[x - \frac{1}{4}\right] + \left[-\left(x - \frac{1}{4}\right)\right]} \rightarrow \left. \begin{array}{l} a \in \mathbb{Z} \rightarrow [a] + [-a] = 0 \\ a \notin \mathbb{Z} \rightarrow [a] + [-a] = -1 \end{array} \right\} \rightarrow x - \frac{1}{4} \in \mathbb{Z}$$

$$D_f = \{x \mid x = \frac{k+1}{k}, k \in \mathbb{Z}\}$$

$D_f = \left[2k\pi - \frac{\pi}{4}, 2k\pi + \frac{\pi}{4} \right] \cup \left[2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4} \right]$

الف) $y = \frac{\cot x + 1}{\tan x + 1} \rightarrow \tan x + 1 = 0 \rightarrow \tan x = -1 \rightarrow x = \frac{3\pi}{4}, \frac{5\pi}{4} \rightarrow k\pi - \frac{\pi}{4}$
 $D = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi, k\pi - \frac{\pi}{4} \right\}$
 بازه مقبول $\downarrow$ اصل منفی نباشد
 بازه مقبول $\downarrow$ بازه منفی سه

ب) $y = \sqrt{1 - 2\sin^2 x} \rightarrow 1 - 2\sin^2 x \geq 0 \rightarrow (1 - 2\sin x)(1 + 2\sin x) \geq 0$
 $\sin x = \frac{1}{2} \rightarrow x = 2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}$

الف) $y = \sqrt{2\sin x - 1} \rightarrow 2\sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{2}$
 $D = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$

ب) $y = \sqrt{1 - 2\cos x} \rightarrow 1 - 2\cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$
 $D = \left[2k\pi + \frac{\pi}{3}, 2k\pi + \frac{5\pi}{3} \right]$
 انتهای بازه نباید از انتهای بازه کوچکتر باشد!

الف) $y = \arcsin(x^2 + 2x + 1) \rightarrow -1 \leq x^2 + 2x + 1 \leq 1$
 $D = [-2, -1] \cup [0, 1]$

ب) $\cos y = \sqrt{5 - 2x} \rightarrow -1 \leq \sqrt{5 - 2x} \leq 1$
 $D = \left[\frac{7}{2}, \frac{9}{2} \right]$

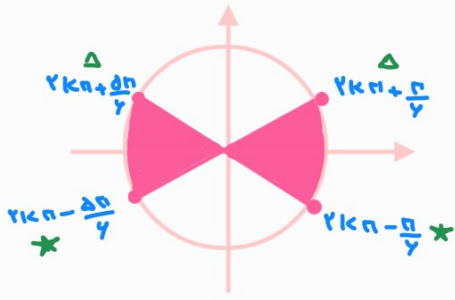
الف) $y = \log_r(1 - \log_{\frac{1}{r}} x) \rightarrow 1 - \log_{\frac{1}{r}} x > 0 \rightarrow 1 > \log_{\frac{1}{r}} x \rightarrow x > \frac{1}{r}$

ب) $y = \log_r(1 - \log_{\frac{1}{r}} x) \rightarrow 1 - \log_{\frac{1}{r}} x > 0 \rightarrow 1 > \log_{\frac{1}{r}} x \rightarrow x < \frac{1}{r}$
 $\log_{\frac{1}{r}} x < 1 \rightarrow x > \frac{1}{r}$
 $D_f = \left(\frac{1}{r}, +\infty \right)$

الف) $y = \sqrt{r^{x-x^2} - 1} \rightarrow r^{x-x^2} - 1 \geq 0 \rightarrow r^{x-x^2} \geq 1 \rightarrow x - x^2 \geq 0 \rightarrow x(1-x) \geq 0$
 $D_f = [0, 1]$

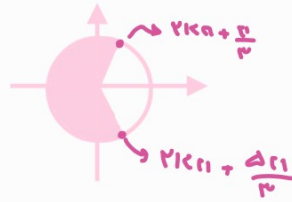
ب) $y = \left(\frac{r^x + \omega}{r^x + \varepsilon} \right)! \rightarrow \frac{r^x + \omega}{r^x + \varepsilon} \in \mathbb{N} \rightarrow r^x + \omega = (r^x + \varepsilon)w \rightarrow r^x - \varepsilon w = \varepsilon w - \omega$
 $D_f = \left\{ x / x = \frac{\varepsilon w - \omega}{r^x - \varepsilon w} \right\}$

$$4- \text{ب) } 1 - r \sin^2 n \geq 0 \rightarrow r \sin^2 n \leq 1 \rightarrow \sin^2 n \leq \frac{1}{r} \rightarrow -\frac{1}{\sqrt{r}} \leq \sin n \leq \frac{1}{\sqrt{r}}$$



$$\rightarrow D_f = [rkn - \frac{\pi}{\sqrt{r}}, rkn + \frac{\pi}{\sqrt{r}}]$$

$$5- \text{ب) } 1 - r \cos^2 n \geq 0 \rightarrow \cos^2 n \leq \frac{1}{r} \rightarrow D_f = [rkn + \frac{\pi}{\sqrt{r}}, rkn + \frac{3\pi}{\sqrt{r}}]$$



$$9- \text{ب) } y = \log_r (1 - \log^{\frac{1}{r}}) \rightarrow \log^{\frac{1}{r}} \rightarrow n > 0$$

$$\hookrightarrow 1 - \log^{\frac{1}{r}} > 0 \rightarrow \log^{\frac{1}{r}} < 1 \xrightarrow{\text{منابعه}} n > \frac{1}{r}$$

$$D_f = (\frac{1}{r}, +\infty)$$