

$$D = V - \left\{ \frac{k\pi}{r}, \frac{(k+1)\pi}{r} \right\}$$

$$\rightarrow \sin^2 x \leq \frac{1}{2} \Rightarrow -\frac{1}{\sqrt{2}} \leq \sin x \leq \frac{1}{\sqrt{2}}$$

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

ب) $|1-\sqrt{2}\cos\theta\rangle_0 \rightarrow |1\rangle, \sqrt{2}\cos\theta \rightarrow \cos\theta \leq \frac{1}{\sqrt{2}} \rightarrow \left[\sqrt{2}\pi + \frac{\pi}{3}, \sqrt{2}\pi - \frac{\pi}{3} \right]$ جواب

$[1, -2] \leftarrow$

$$\frac{-1}{+1} \frac{0}{-1} \rightarrow D \in [-5, -2] \cup [1, 9]$$

[illegible]

✓ $D = (0, 3)$ ✓

ب) $\log_{\frac{1}{r}} (1 + \log_{\frac{1}{r}} x) \langle x \rangle_0, 1 - \log_{\frac{1}{r}} x \rangle_0 \rightarrow 1 \rangle \log_{\frac{1}{r}} x \rightarrow \frac{1}{r} \langle x, x \rangle \frac{1}{r}$

$$D = [19r] \quad \leftarrow \frac{1}{\begin{matrix} + & - & + \\ 1 & 0 & 1 \end{matrix}}$$

$$\frac{f_{w-d}}{r-r_w} = x_r \quad x(r-r_w) = f_{w-d} \quad r x - r x w = f_{w-d} \quad r x + d = r x w + f_w \quad \frac{r x + d}{r x + f} \in \frac{w}{c}$$

$$D = \{x/x = \frac{f_{k-d}}{r-r_k}, k \in w\}$$

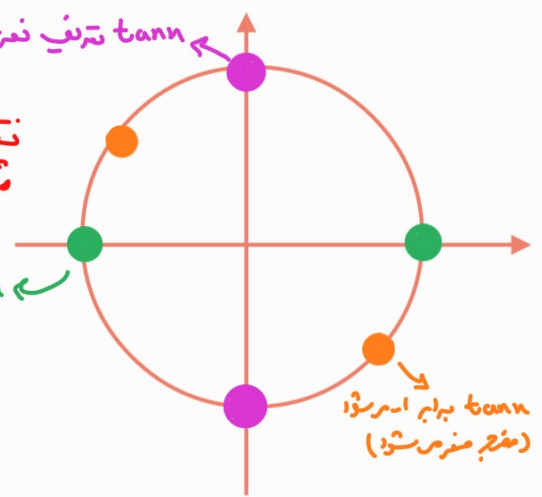
الف) $y = \frac{x+3}{(x-1)(x+1)(x+2)}$ $\rightarrow x \neq 1$ و $\frac{1}{x} \neq -2$ $\rightarrow$ دایره = $R - \{1, -\frac{1}{2}\}$	۱
الف) $\frac{x+3}{(x-1)(x^2x+1)} \rightarrow x \neq 1 \rightarrow D = R - \{1\}$ ب) $\sqrt{\frac{x+3}{(x-1)(x^2-x+1)}}$ $\rightarrow \frac{-\frac{1}{x+1} - \frac{1}{1-x}}$ $D = (-\infty, -\frac{1}{2}] \cup (1, \infty)$	۲
$y = \frac{2}{x^2-5 x-1 -2x+5} \rightarrow x-1 ^2 - 5 x-1 + 5 \rightarrow A = x-1 \rightarrow (A-1)(A-4) = 0$ $(x^2+2x) = 0 \rightarrow x = 0$ و -2 $\rightarrow A = 1 \rightarrow A^2 - 5A + 5 = 0$ ب) $A = 4$ $x-1 = -1 \rightarrow x = 0 \rightarrow x-1 = 1 \rightarrow x = 2$ $x-1 = -4 \rightarrow x = -3 \rightarrow x-1 = 4 \rightarrow x = 5$ $(x-2)(x-5) \rightarrow x = 2$ و 5 $\rightarrow R - \{-2, 0, 2, 5\}$	۳
الف) $\sqrt{[-x]-2} \rightarrow [-x]-2 \geq 0 \rightarrow [-x] \geq 2 \rightarrow x \leq -2 \rightarrow D = (-\infty, -2]$ ب) $\frac{4x^2+4}{(x-2)(x+1)} \rightarrow [x] \neq 2 \rightarrow x \notin [2, 4) \rightarrow R - [2, 4) \cup [-1, 0)$ $[x] \neq 1 \rightarrow x \notin [-1, 0]$	۴
الف) $y = \sqrt{[x-\frac{1}{3}]} + [x-\frac{1}{3}+1] \rightarrow \sqrt{2[x-\frac{1}{3}]+1} \rightarrow 2[x-\frac{1}{3}]+1 \geq 0 \rightarrow 2[x-\frac{1}{3}] \geq -1$ $\rightarrow [x-\frac{1}{3}] \geq -\frac{1}{2} \rightarrow x - \frac{1}{3} \geq 0 \rightarrow x \geq \frac{1}{3} \rightarrow D = [\frac{1}{3}, +\infty)$ ب) $\sqrt{[A]} + [-A] \rightarrow A \in \mathbb{Z} \rightarrow [A] + [-A] = 0 \checkmark$ $A \notin \mathbb{Z} \rightarrow [A] + [-A] = -1$ غلط $\rightarrow x - \frac{1}{3} \in \mathbb{Z} \rightarrow D = \{x x = k + \frac{1}{3}, k \in \mathbb{Z}\}$	۵

الف ۴) $y = \frac{\cot x + 1}{\tan x + 1}$

→ نقاط نامطلوب را در دایره مشخص می‌کنیم.

$\cot x$ تعریف نمی‌شود

$\tan x$ تعریف نمی‌شود



$x \neq k\pi + \frac{\pi}{2}$

$x \neq k\pi + \frac{\pi}{4} \cup x \neq k\pi$

$\hookrightarrow x \neq \frac{k\pi}{4}$

$\rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, k\pi + \frac{\pi}{2} \right\}$

ب ۸) $\sqrt{5-2n} \rightarrow 5-2n \geq 0 \rightarrow n \leq \frac{5}{2}$

$-1 \leq \sqrt{5-2n} \leq 1 \rightarrow 5-2n \leq 1 \rightarrow -2n \leq -4 \rightarrow n \geq 2$

همواره برقرار است ✓

$\rightarrow D_f = \left[2, \frac{5}{2} \right]$