

۱۷/۵ سوالاتی که نوشته شده است مطالعه شود! هر چه قبلاً دانستید توی این سوالات دوباره خوانندگی

الف) $y = \frac{n+1}{(n-1)(n+3)(n-\frac{1}{4})} = y$ $\rightarrow D_f = R - \{1, -3, -\frac{1}{4}\}$

ب) $y = \frac{n+1}{(n+1)(n+3)(n+\frac{1}{4})}$ $\rightarrow D_f = R - \{-1, -3, -\frac{1}{4}\}$

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

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

if $n > 1$ $\frac{1}{n} = \frac{1}{(n-1)(n-2)}$ $\rightarrow n \neq 2$
if $n < 1$ $\frac{1}{n} = \frac{1}{n(n+3)}$ $\rightarrow n \neq 0$
 $D_f = R - \{2, 0, -3\}$

الف) $[-n] - 2 \geq 0$ $[-n] \geq 2$ $n \leq -2$ $\rightarrow D_f = (-\infty, -2] \cup (1, 2) \cup [2, +\infty)$
ب) $\frac{A^2 + 9}{A^2 - 2A - 3}$ $A \neq 3$ $A \neq -1$ $[n] \neq 3 \rightarrow R - [3, 4)$ $[n] \neq -1 \rightarrow R - (-2, -1]$

الف) $y = \sqrt{2[n - \frac{1}{4}] + 1}$ $\rightarrow 2[n - \frac{1}{4}] + 1 \geq 0$ $[n - \frac{1}{4}] \geq -\frac{1}{2}$
 $n - \frac{1}{4} \geq 0$ $n \geq \frac{1}{4}$ $D_f = [\frac{1}{4}, +\infty)$

ب) $\sqrt{[n - \frac{1}{4}] + [\frac{1}{4} - n]}$ $\rightarrow n - \frac{1}{4} \leq z \rightarrow D_f = \{n | n = x + \frac{1}{4}, x \in \mathbb{Z}\}$

الف) $\tan \theta + 1 \neq 0 \quad \tan \theta \neq -1$

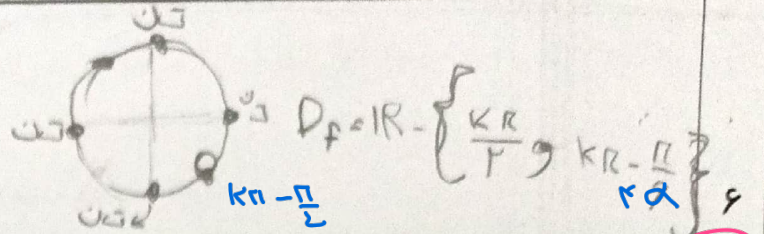
۱۷۵

$-\frac{1}{\sqrt{2}} \leq \sin \theta \leq \frac{1}{\sqrt{2}}$
 $\sin \theta \leq \frac{1}{\sqrt{2}} \rightarrow \sin \theta \leq \frac{1}{\sqrt{2}}$

ب) $1 - 2 \sin^2 \theta \geq 0 \quad \sin \theta \leq \frac{1}{\sqrt{2}}$

۱۷۵

در این ناحیه $-\frac{1}{\sqrt{2}} \leq \sin \theta \leq \frac{1}{\sqrt{2}}$ است

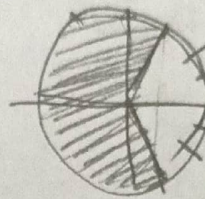
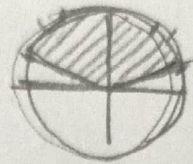


$D_f = \left[\frac{\pi}{4}, \frac{3\pi}{4} \right] \cup \left[\frac{5\pi}{4}, \frac{7\pi}{4} \right]$

۱

الف) $2 \sin \theta - 1 \geq 0 \quad \sin \theta \geq \frac{1}{2}$

ب) $1 - 2 \cos \theta \geq 0 \quad \cos \theta \leq \frac{1}{2}$



$D_f = \left[\frac{\pi}{6}, \frac{5\pi}{6} \right] \cup \left[\frac{2\pi}{3}, \frac{4\pi}{3} \right]$

انتخاب بازه مناسب از ابتدای بازه
 کدیکه ترتیبش!

$D_f = \left[\frac{\pi}{6}, \frac{5\pi}{6} \right] \cup \left[\frac{2\pi}{3}, \frac{4\pi}{3} \right]$

۱۷۵

۷

الف) $-1 \leq n^2 + 2n + 1 \leq 1$
 $n^2 + 2n \leq 0$
 $n^2 + 2n + 2 \geq 0$
 $(n+1)(n+2)$

$n \rightarrow [-2, -1] \cup [0, 1]$

۱۷۵

۸

ب) $a - 2n \geq 0 \quad n \leq \frac{a}{2}$
 $\sqrt{a-2n} \leq 1 \rightarrow a-2n \leq 1 \rightarrow n \geq \frac{a-1}{2}$
 $0 \leq \sqrt{a-2n} \leq \frac{1}{\sqrt{2}} \rightarrow a-2n \leq \frac{1}{2} \rightarrow 2n \geq \frac{2a-1}{2} \rightarrow n \geq \frac{2a-1}{4}$

الف) $1 - \log_2 n \geq 0 \quad \log_2 n \leq 1 \rightarrow n \leq 2 \rightarrow D_f = (0, 2]$

ب) $1 - \log_2 \frac{n}{2} \geq 0 \quad \log_2 \frac{n}{2} \leq 1 \rightarrow \frac{n}{2} \leq 2 \rightarrow n \leq 4 \rightarrow D_f = (0, 4]$

چون مبنا بین ۰ و ۱ است و به ناعداد صحیح مربوط!

۱۷۵

۹

الف) $n^2 - 2n + 2 \geq 0 \rightarrow n^2 - 2n + 2 \leq 0$
 $(n-1)(n-2)$

$D_f = [1, 2]$

ب) $\frac{n^2 + a}{n^2 + r} \in W \rightarrow n^2 + a = 2nw + r \rightarrow n(n - 2w) = r - a$
 $D_f = \left\{ n \mid n = \frac{rk - a}{r - 2k}, k \in W \right\}$
 $n = \frac{rk - a}{r - 2k}$

۱۷۵

۱۰

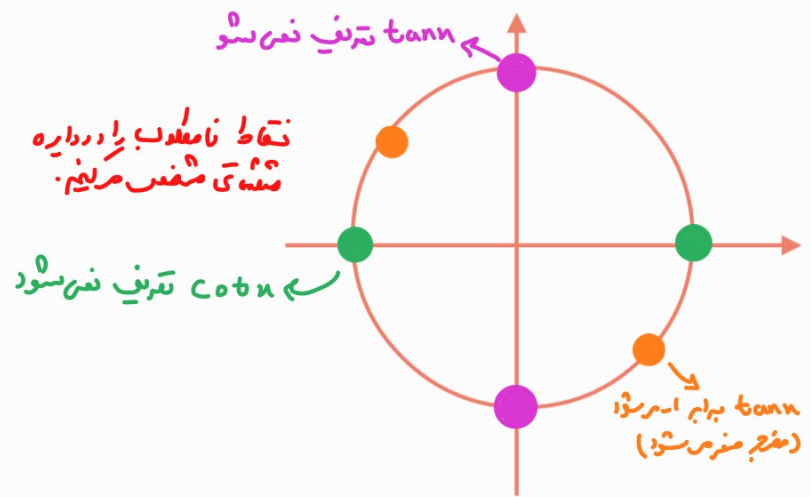
الف - 4) $y = \frac{\cot x + 1}{\tan x + 1}$

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

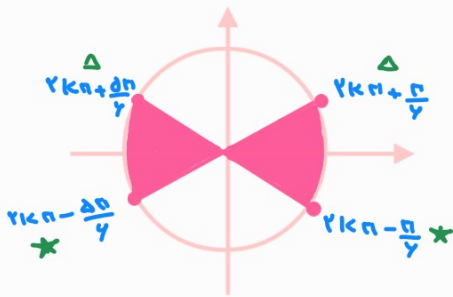
$x \neq k\pi + \frac{\pi}{2} \cup x \neq k\pi$

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

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

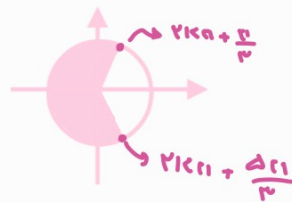


ب - 4) $1 - r \sin' x \geq 0 \rightarrow r \sin' x \leq 1 \rightarrow \sin' x \leq \frac{1}{r} \rightarrow -\frac{1}{r} \leq \sin x \leq \frac{1}{r}$



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

ب - 5) $1 - r \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{r}$



$\rightarrow D_f = [r k\pi + \frac{\pi}{r}, r k\pi + \frac{\pi}{r}]$

ب - 8) $\sqrt{\omega - r x} \rightarrow \omega - r x \geq 0 \rightarrow x \leq \frac{\omega}{r}$

$\rightarrow D_f = [r, \frac{\omega}{r}]$

$-1 \leq \sqrt{\omega - r x} \leq 1 \rightarrow \omega - r x \leq 1 \rightarrow -r x \leq -\omega + 1 \rightarrow x \geq r$

همواره برقرار است ✓

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

$$\hookrightarrow 1 - \log^{\frac{n}{r}} \frac{1}{r} > 0 \rightarrow \log^{\frac{n}{r}} \frac{1}{r} < 1 \xrightarrow{\text{مناسب (0,1)}} n > \frac{1}{r}$$

$$Df_2 \left(\frac{1}{r}, +\infty \right)$$