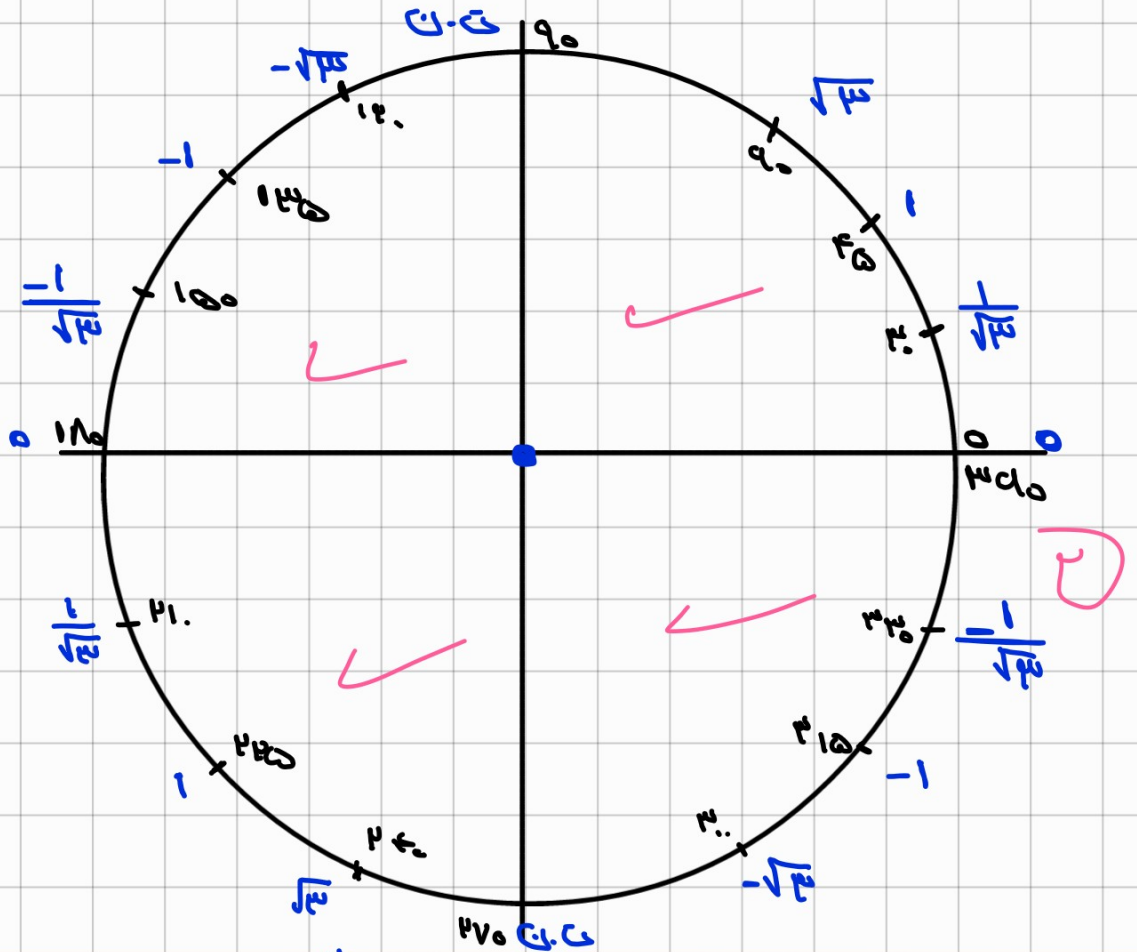


۱۹، ۲۵ آفرین

یجیادی - کلین ۲۵۰۱



$$\sin \frac{\pi}{4} + \cos \frac{\pi}{4} + \frac{1}{2} \sin \frac{\pi}{4} = \frac{1}{2} - \frac{1}{2} = \frac{1}{2} - \frac{1}{2} = 0$$

$$- \cos \frac{\pi}{4} + \sin \frac{\pi}{4} - \frac{1}{2} \sin \frac{\pi}{4} = \frac{1}{2} - \frac{1}{2} = 0$$

$$\cos \frac{\pi}{4} + \frac{1}{2} \cos \frac{\pi}{4} - \frac{1}{2} \tan \frac{\pi}{4} = \frac{1}{2} + \frac{1}{2} - \frac{1}{2} = \frac{1}{2}$$

$$\cos \frac{\pi}{4} + \sin \frac{\pi}{4} \cos \frac{\pi}{4} = \frac{1}{2} + \frac{1}{2} = 1$$

راه حل صفحہ آخر نوشته شد

$$f(x) = \begin{cases} x^2 + Fx & x \geq a \\ x + a + F & x < a \end{cases}$$

$$a^2 + Fd = Fd + F$$

$$a^2 + a - F = 0 \rightarrow a + F, a - 1$$

$$(a = -F, 1) \rightarrow a > 0 \rightarrow -F \text{ و } 1$$

$$x = a \rightarrow a^2 + Fd$$

$$x = a \rightarrow Fd + F$$

$$a = 1 \rightarrow \begin{cases} x^2 + Fx & x \geq 1 \\ x + F & x < 1 \end{cases}$$

$$\rightarrow f(1) = 0$$

$$f(x) = \begin{cases} x^p - b & |x+1| \geq p \\ a + px & -p \leq x \leq -1 \end{cases}$$

$$|x+1| \geq p \rightarrow x+1 \geq p \rightarrow x \geq p-1$$

$$x+1 \leq -p \rightarrow x \leq -p-1$$

$$x = -p \rightarrow px - b$$

$$x = -p \rightarrow a - p \rightarrow a - b = a - p \rightarrow a + b = p^2$$

$$y = \frac{1}{x^p - px^p} \rightarrow x^p - px^p \neq 0 \rightarrow x^p(x - p) \neq 0$$

$$x \neq 0, x \neq p$$

$$D = \{0, p\}$$

$$y = \frac{1}{x^p - px^p + px + p} \rightarrow x^p(x - p) + p(x + p)$$

$$(x - p)(x^p + p) \neq 0 \rightarrow x = -p$$

$$x^p + p \rightarrow \text{دائم}$$

$$D = \{0, p\}$$

$$y = \sqrt{x^p - 1} + \sqrt{x - p} \rightarrow x^p - 1 \geq 0 \rightarrow x^p \geq 1$$

$$x \geq 1 \text{ or } x \leq -1$$

$$x - p \geq 0 \rightarrow x \geq p$$

$$x \in [p, +\infty)$$

$$y = \frac{\sqrt{a - px}}{\sqrt{ax - p}}$$

$$a - px \geq 0 \rightarrow a \geq px \rightarrow p \geq x$$

$$ax - p \geq 0 \rightarrow ax \geq p \rightarrow x \geq \frac{p}{a}$$

$$x \in [\frac{p}{a}, p]$$

$$y = \sqrt{ax - a} + \sqrt{b - px}$$

$$ax - a \geq 0 \rightarrow ax \geq a \rightarrow x \geq \frac{a}{a}$$

$$b - px \geq 0 \rightarrow b \geq px \rightarrow x \leq \frac{b}{p}$$

$$\frac{b}{p} = \frac{a}{a} \rightarrow ab = pa$$

$$\frac{b}{a} = \frac{1}{p}$$

$$y = \sqrt{\frac{x^p - x - a}{x^p - px^p + px}} \rightarrow \frac{x^p - x - a}{x^p - px^p + px} \geq 0$$

$$x^p - x - 4 \rightarrow (x - p)(x + p) \rightarrow x = p, -p$$

$$x^p - (px^p + p^2) \rightarrow x^p = p \rightarrow (p - p, p - p) \rightarrow x^p = p, x = \pm p$$

$$\frac{-p}{-p} \quad \frac{p}{p} \quad \frac{p}{p} \quad \frac{p}{p}$$

$$+ \frac{p}{p} - \frac{p}{p} - \frac{p}{p} + \frac{p}{p} +$$

$$(-\infty, -p) \cup (p, p) \cup (p, +\infty)$$

ج ١

$$\sqrt{\frac{x^p - px^p - 4x + 4}{x^p + px^p - 4x - 4}}$$

$$\omega_{\pm} = p, -p$$

$$(x - p)(x + p)(x - 1) \leftarrow \lim_{x \rightarrow 0}$$

$$(x + p)(x - p)(x + 1) \leftarrow \lim_{x \rightarrow \infty}$$

$$\begin{array}{c} -p, p, -1 \\ -p, -p, -1, 1, p, p \end{array}$$

$$\begin{array}{r} x^p - px^p - 4x + 4 \mid x - 1 \\ -x^p - x^p \\ \hline -x^p - 4x + 4 \\ -x^p + x \\ \hline -4x + 4 \\ -4x + 4 \\ \hline 0 \end{array}$$

$$\begin{array}{r} x^p + px^p - 4x - 4 \mid x + 1 \\ -x^p + x^p \\ \hline x^p - 4x - 4 \\ -x^p + x \\ \hline -4x - 4 \\ -4x - 4 \\ \hline 0 \end{array}$$

$$D_f = (-\infty, -p) \cup [-p, -1] \cup [1, p] \cup [p, +\infty)$$

الف  $\sqrt{f(x)} = f$

$$f(x) = f \rightarrow [x] \geq p \rightarrow x \geq p \rightarrow [p, +\infty)$$

ب  $\sqrt{f(x)} = 0$

$$x \geq p \rightarrow [p, +\infty)$$

الف  $y = \sqrt{\frac{x+1}{|x-p|}}$

$$+ \sqrt{\frac{4-x}{x^p + px^p + f}}$$

$$\frac{-1}{+p} - \frac{p}{p}$$

$$\frac{x+1}{|x-p|} \geq 0$$

$$\rightarrow -1 \mid x - p \neq 0 \rightarrow x \neq p$$

$$(-\infty, -1] \cup (p, +\infty)$$

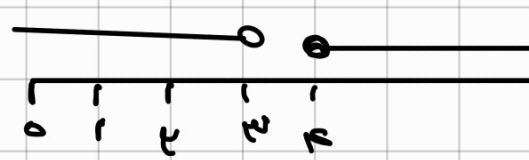
$$\frac{4-x}{x^2+2x+2} \geq 0 \rightarrow 4-x \geq 0 \rightarrow 4 \geq x \rightarrow (-\infty, 4] \\ x^2+2x+2 \geq 0 \rightarrow \Delta < 0 \rightarrow b^2-4ac \rightarrow 4-4 < 0 \rightarrow \text{همواره مثبت است}$$


$$(-\infty, -1] \cup (4, \infty)$$

ب)  $\sqrt{[x]-4} + \sqrt{4-[x]}$  |x-3| همواره نامنته است و نیازی به تعیین علامت ندارد!

$$[x]-4 \geq 0 \rightarrow [x] \geq 4 \rightarrow x \geq 4 \rightarrow [4, +\infty)$$

$$4-[x] \geq 0 \rightarrow 4 \geq [x] \rightarrow x \leq 4 \rightarrow x < 4 \rightarrow (-\infty, 4)$$



$$\rightarrow \text{اشتراک ندارد} \rightarrow D_f = \emptyset$$

ج-۲)  $c \cdot t \frac{r_1}{r} + w \cdot t \frac{r_2}{r} - r \cdot \tan \frac{\alpha}{4} = -\sqrt{\frac{r}{r}} + w(\sqrt{\frac{r}{r}}) - r(-\sqrt{\frac{r}{r}}) = \frac{4\sqrt{r}}{r}$

الف-۱۰)  $y = \sqrt{\frac{n+1}{|n-4|}} + \sqrt{\frac{4-n}{n^2+2n+2}}$

به فضا مقیدیت مفروض!

$$\begin{cases} \frac{n+1}{|n-4|} \geq 0 \rightarrow n \geq -1, n \neq 4 \quad I \\ \frac{4-n}{n^2+2n+2} \geq 0 \rightarrow n \leq 4 \quad II \end{cases}$$

به Δ < 0، همواره مثبت و بدون مقیدیت

$I \cap II \rightarrow D_f = [-1, 4) \cup (4, \infty) \subseteq [-1, 4] - \{4\}$