

$$f(x) = \sqrt{(a-2)x^2 + ax + b}$$

$$D_f = [2, +\infty)$$

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$$I: a-2=0 \Rightarrow a=2, \sqrt{2x+b}$$

برای اینکه عبارت تحت رادیکال مربع  $x^2$  را صفر می‌گذاریم.

$$II: x=3, 9+b=0 \Rightarrow b=-9$$

می‌دانیم ریشه این ۳ است پس  $x$  را برابر ۳ می‌گذاریم

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \Rightarrow (x+1)^2 + 1 - m^2 \Rightarrow (x+1)^2 + (1-m)(1+m)$$

$$1 - m^2 \geq 0 \Rightarrow m^2 \leq 1 \Rightarrow -1 \leq m \leq 1$$

$$1 - (-1) = 2$$

$$f(x) = \frac{\sqrt{\varepsilon - x^2}}{[x] + [-x] + 1}$$

$$I: \varepsilon - x^2 \geq 0 \Rightarrow x^2 \leq \varepsilon \Rightarrow -2 \leq x \leq 2 \Rightarrow -2, -1, 0, 1, 2$$

$$[x] + [-x] \rightarrow \begin{matrix} \mathbb{Z} = 0 \\ \mathbb{Q} = -1 \end{matrix}$$

۵ عدد صحیح

$$y = \sqrt{x^3 + 3x^2} \Rightarrow x^3 + 3x^2 \geq 0 \Rightarrow x^2(x+3) \geq 0$$

$$\begin{array}{c|c|c|c} -3 & 0 & 3 & \text{افزایش} \\ \hline - & + & + & \end{array}$$

$$D_f = [-3, +\infty)$$

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

$$\begin{array}{c|c|c|c|c|c} -1 & 0 & 1 & 3 & & \\ \hline + & - & - & - & + & \end{array}$$

$$(-\infty, -1] \cup [3, +\infty) \cup \{0\}$$

بازای  $x=0$  عبارت برابر ۰ است

پس در دامنه هست!

$$y = \sqrt{|x-2| - 3} \Rightarrow |x-2| - 3 \geq 0 \Rightarrow |x-2| \geq 3$$

$$x-2 \leq -3 \quad \text{or} \quad x-2 \geq 3$$

$$x \leq -1 \quad \text{or} \quad x \geq 5$$

$$D_f = (-\infty, -1] \cup [5, +\infty)$$

$$y = \sqrt{\epsilon - |2-x|} \Rightarrow \epsilon - |2-x| \geq 0 \Rightarrow |2-x| \leq \epsilon \Rightarrow -\epsilon \leq 2-x \leq \epsilon$$

$$\Rightarrow -2 \leq x \leq 4 \Rightarrow D_f = [-2, 4]$$

$$y = \sqrt{-x|x|} \Rightarrow -x|x| \geq 0$$

صورت سوال را اینجابه نوشتی :-

$$D_f = (-\infty, 0]$$

$$y = \frac{1}{\sqrt{3-|x-5|} - 1} \Rightarrow I: 3-|x-5| \geq 0 \Rightarrow |x-5| \leq 3 \Rightarrow$$

$$-3 \leq x-5 \leq 3 \Rightarrow 2 \leq x \leq 8$$

$$II: \sqrt{3-|x-5|} - 1 \neq 0 \Rightarrow \sqrt{3-|x-5|} \neq 1 \Rightarrow 3-|x-5| \neq 1$$

$$|x-5| \neq 2 \Rightarrow x \neq 3, 7$$

$$I \cap II \Rightarrow [2, 3) \cup (3, 7) \cup (7, 8]$$

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

$$y = \frac{\sin^2 x - 1}{\cos x} \Rightarrow \cos x \neq 0$$



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

نقاط مست :-

$$y = \frac{\cos x}{2\cos x - 1} \Rightarrow 2\cos x - 1 \neq 0 \Rightarrow \cos x \neq \frac{1}{2}$$



$$D_f = \mathbb{R} - \left\{ 2k\pi \pm \frac{\pi}{3} \right\}$$

$$y = \frac{x+r}{|rx+1|-|x+r|} \Rightarrow |rx+1| - |x+r| \neq 0 \Rightarrow |rx+1| \neq |x+r| \quad (\text{و لا})$$

$$\left. \begin{array}{l} rx+1 \neq x+r \Rightarrow x \neq r \\ rx+1 \neq -x-r \Rightarrow x \neq -\frac{\varepsilon}{r} \end{array} \right\} D_f = R - \left\{ -\frac{\varepsilon}{r}, r \right\}$$

$$y = \sqrt{|rx+1| - |x+r|} \Rightarrow |rx+1| - |x+r| \geq 0 \Rightarrow$$

$$|rx+1| \geq |x+r| \Rightarrow (rx+1)^2 \geq (x+r)^2 \Rightarrow \varepsilon x^2 + \varepsilon x + 1 \geq x^2 + 2rx + r^2$$

$$\varepsilon x^2 - 2rx - 1 \geq 0 \quad \frac{r \pm \sqrt{100}}{\varepsilon} = x_1 = r, \quad x_2 = -\frac{\varepsilon}{r}$$

$$\begin{array}{c} -\frac{\varepsilon}{r} \quad r \\ + \quad | \quad - \quad | \quad + \end{array}$$

$$D_f = \left( -\infty, -\frac{\varepsilon}{r} \right] \cup [r, +\infty)$$

$$f(x) = \sqrt{\log_{0.5}(\log_a(rx-1))} \Rightarrow \log_{0.5}(\log_a(rx-1)) \geq 0$$

$\frac{1}{r} < 1$

$$0 < \log_a(rx-1) \leq 1 \Rightarrow 1 < rx-1 \leq a \Rightarrow r < rx \leq a \Rightarrow \boxed{1 < x \leq r}$$

$$\boxed{D_f = (1, r]}$$

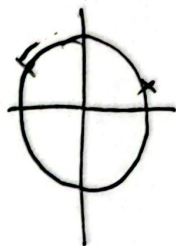
$$\text{I: } rx-1 > 0 \Rightarrow rx > 1 \Rightarrow x > \frac{1}{r} \checkmark$$

$$\text{II: } \log_a(rx-1) > 0 \Rightarrow rx-1 > 1 \Rightarrow x > \frac{2}{r} \checkmark$$

$$y = \log(r \cos \theta + 1) \Rightarrow r \cos \theta + 1 > 0 \Rightarrow r \cos \theta > -1$$

(نصف)

$$\cos \theta > -\frac{1}{r}$$

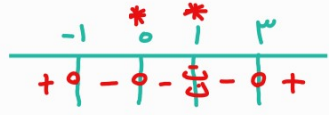


$$\boxed{R - \left[ r k \pi + \frac{r \pi}{r}, r k \pi + \frac{r \pi}{r} \right]}$$

فاصله انتهای بازه از ابتدای آن کم می‌شود

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$$\begin{aligned}
 y &= \sqrt{\log \frac{x-1}{x+1}} \Rightarrow \log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \frac{x-1}{x+1} - 1 \geq 0 \quad (\text{C}) \\
 \frac{x-1-(x+1)}{x+1} &\geq 0 \Rightarrow \frac{-2}{x+1} \geq 0 \Rightarrow \boxed{(-\infty, -1)}
 \end{aligned}$$

ج- ۴  $\frac{(n^2-1)(n^2-n^2)}{(n^2-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$  

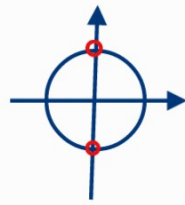
$D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$  ۵۰. ریشه ندارد

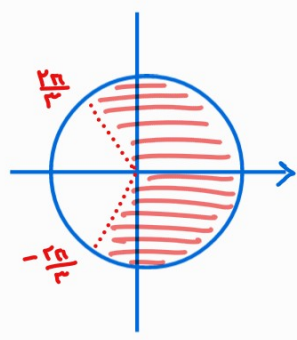
الف- ۴  $1 - n|n| \geq 0$

$n \geq 0 \rightarrow 1 - n^2 \geq 0 \rightarrow n^2 \leq 1 \rightarrow -1 \leq n \leq 1 \xrightarrow{n \geq 0} 0 \leq n \leq 1$

$n \leq 0 \rightarrow 1 + n^2 \geq 0$   همواره مثبت ✓

$D_f = (-\infty, -1] \cup [0, 1]$  ۱. محاسبه مرتبه انتیم مثل تابع را رسم کنیم

الف- ۵  $y = \frac{\sin^2 n - 1}{\cos n} \rightarrow \cos n \neq 0 \rightarrow$    $\rightarrow D_f = \mathbb{R} - \{kn + \frac{\pi}{2}\}$

الف- ۶  $2\cos n + 1 > 0 \rightarrow \cos n > -\frac{1}{2} \rightarrow$    $\rightarrow D_f = (2kn - \frac{\pi}{3}, 2kn + \frac{\pi}{3})$