

نبرته بدون اسم صفر لحاظ می شود $\rightarrow x > -1$
 مرتب بنویس $\therefore$
 $y-1=x \Rightarrow y>0 \rightarrow y=\frac{x+1}{x} \rightarrow y>0 \Rightarrow x>-1$
 $-y \leq x \Rightarrow y \leq -x \rightarrow y=\sqrt{-x} \Rightarrow \sqrt{-x} > 1 \rightarrow x < -1$ تابع مست
 صفحه آفر ... (۲)

۲-
 $f(x) = \frac{-x^2 + 3x - 4}{x^2 + 1} \rightarrow f(x-1) = \frac{-x^2 + 3x - 4}{x^2 + 1} \rightarrow x \rightarrow f(x) = \frac{-x^2 + 3x - 4}{x^2 + 1}$
 $\frac{x \cdot f(x-1)}{f(x)}$

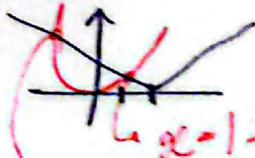
$(-4, -2] \cup [2, 3] \cup [7, +\infty)$
 فقط دو است باشد که $x=4$ در دامنه f و $x=2$ در دامنه f نیست که در بازه است آفره نیستند
 $x^2 - 4x = 0 \rightarrow x(x-4) \rightarrow x(x-2)(x+2) - 3x$
 $\Rightarrow Df = R - \{-1, 0, 2\}$ (الف) (۲)

ب-
 $\frac{x-1}{x(x-1)(x+2)} \rightarrow \frac{1}{x(x+2)}$
 $\frac{-x^2 - 3x - 2}{x^2 + 2x} \rightarrow \frac{-x-2}{x+2} \rightarrow \frac{-1}{x+2}$
 $\Rightarrow Df = (-2, +\infty) - \{-1\}$

۳-
 الف = $\frac{x-2}{x^2 - 2x - 8} > 0 \rightarrow \frac{(x-2)}{(x-4)(x+2)} \Rightarrow \frac{(x-2)}{(x-2)(x+2)(x+4)}$
 $\Rightarrow \frac{1}{(x+2)(x+4)} \rightarrow \frac{-1}{x^2 + 6x + 8} \Rightarrow Df = (-2, +\infty) - \{2\}$
 ب = $1 - 2[x] \neq 0 \Rightarrow [x] \neq \frac{1}{2} \rightarrow x \neq \frac{1}{2}$
 $\Rightarrow R - \{\frac{1}{2}\} = Df$

۴-
 الف) $\frac{x(x-1)(x+1)}{x^2 + x} \geq \frac{1}{x+1} + \frac{1}{x-1}$ (۲)

$x^2 + x > 0 \Rightarrow x > 0$
 $Df = [0, +\infty)$

ب-
 $|x-2| - x^2 > 0 \rightarrow |x| \neq 1 \neq 0 \Rightarrow x \neq \pm 1$
 $\Rightarrow Df = (-1, 1) - \{1\}$


$\frac{f(x)}{g(x)} = \frac{(x-2)[x-2]}{(x-1)[x-2]} \geq 0 \Rightarrow \frac{f(x)}{g(x)} = \frac{x-2}{x-1}$ (2)
 $\frac{x-2}{x-1} \geq 0 \Rightarrow [x-2] \geq 0 \Rightarrow x \geq 2$ (3)

$|x-2| - 1 = k$ (2)
 $x-2 = \pm(k+1)$
 $x > 2 \Rightarrow x-2 = k+1 \Rightarrow x = k+3$
 $x < 2 \Rightarrow 2-x = k+1 \Rightarrow x = 1-k$
 $x-2 = -(k+1) \Rightarrow x = 1-k$
 $x-2 = k-1 \Rightarrow x = k+1$
 $x-2 = -k-1 \Rightarrow x = -k-1$
 $x-2 = k-1 \Rightarrow x = k+1$
 $x-2 = -k-1 \Rightarrow x = -k-1$

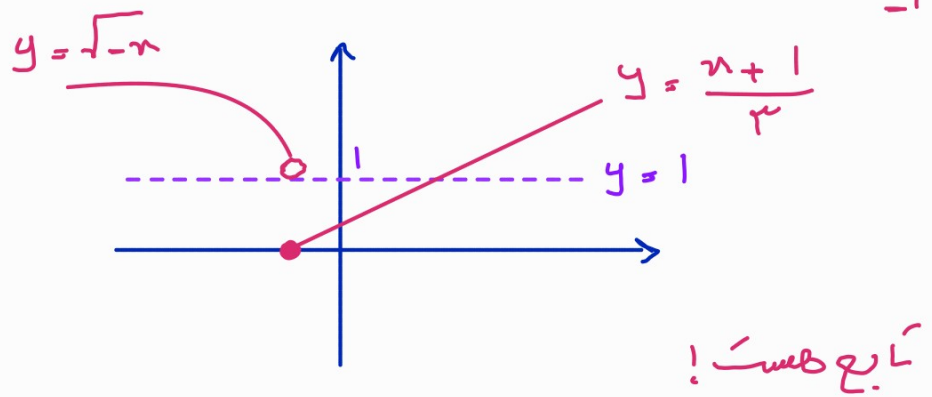
$|x-2| - 1 = k$ (1)
 $x=2 \Rightarrow |2-2| - 1 = -1 = k \Rightarrow k = -1$
 $x=0 \Rightarrow |0-2| - 1 = 1 = k \Rightarrow k = 1$
 $|x-2| - 1 = k \Rightarrow |x-2| = k+1$
 $x-2 = \pm(k+1) \Rightarrow x = 2 \pm (k+1)$
 $x = k+3$ or $x = 1-k$
 $k=3 \Rightarrow x=6$ or $x=-2$
 $k=1 \Rightarrow x=4$ or $x=0$
 $k=-1 \Rightarrow x=2$ or $x=2$

$\frac{(x+2)(x-1)}{(x+2)(x-1)} = \frac{x-1}{x-1} = 1$ (2)
 $\Rightarrow Df = R - \{-2, 1\}$
 $\Rightarrow x^2 - 9x + 9$
 $(x-3)^2$
 $\Rightarrow$ ارسنه داره

$\log \frac{1}{x} > 0 \Rightarrow x < 1$ (1)
 $\log \frac{1}{x} > 0 \Rightarrow \frac{1}{x} > 1 \Rightarrow x < 1$
 $\Rightarrow Df = (0, 1)$

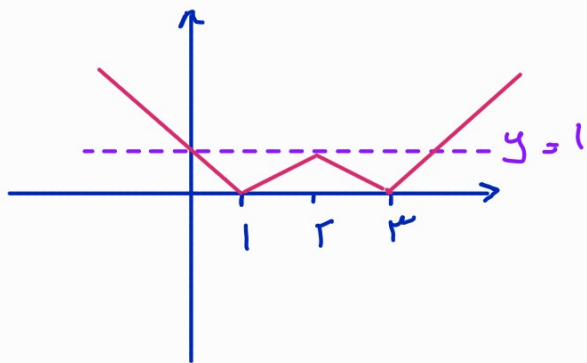
$f(x) = \frac{1}{x^2-1}$ (2)
 $f(x) \rightarrow [-1, 3] \rightarrow [-2, 2]$
 $f(x) \rightarrow [\frac{1}{3}, \frac{2}{3}] \rightarrow [\frac{1}{3}, \frac{2}{3}]$
 $\Rightarrow Df = [\frac{1}{3}, \frac{2}{3}]$

$$y = \begin{cases} \frac{n+1}{n} & y \geq 0 \\ \sqrt{-n} & y > 1 \end{cases}$$



$$K - 2[-n] \neq 0 \rightarrow [-n] \neq 2 \rightarrow D_f = \mathbb{R} - (-2, -1] \quad \text{۴-ب}$$

$$||n-2|-1| = K \rightarrow \text{۳ ریشه دارد} \quad \text{۷-}$$



شکل تابع را با حفظ قطع مرد هم :

چون ۳ نقطه برخورد دارند پس $K = 1$ بوره!

$$1) \quad n+1 > 0 \rightarrow n > -1, \quad n+1 \neq 1 \rightarrow n \neq 0 \quad \text{۹-}$$

$$2) \quad n > 0, \quad n \neq 1$$

$$3) \quad \lg \frac{1}{n} > 0 \rightarrow 0 < n < 1$$

$$\xrightarrow{n} D_f = (0, 1)$$