

$$x=3 \rightarrow 0 \rightarrow (a-2)9 + 3a + b \rightarrow 12a + b = 18$$

$$b = 18 - 12a$$

$$\frac{c}{a} = 4 \rightarrow \frac{b}{a-2} = 4 \rightarrow b = 4a - 18$$

$$18 - 12a = 4a - 18 \quad \text{بدین قه بائید (مشتال حل جوده)}$$

$$34 = 21a$$

$$a = \frac{12}{7} \rightarrow b = 18 - \frac{144}{7} = \frac{126 - 144}{7} = -\frac{18}{7}$$

$$x^2 + 2x + 2 - m^2 \rightarrow \underbrace{(x+1)^2}_{\text{همیشه +}} + 1 - m^2 \quad 1 - m^2 \geq 0 \quad m^2 \leq 1$$

$$-1 \leq m \leq 1$$

$$1 - (-1) = \boxed{2}$$

$$x - x^2 \geq 0 \quad x^2 \leq x \rightarrow -2 \leq x \leq 2$$

$$[x] + [-x] = \begin{cases} x \in \mathbb{Z} \rightarrow x = 1 \\ x \notin \mathbb{Z} \rightarrow x = 0 \end{cases}$$

$$D_f = -2 \text{ و } -1 \text{ و } 2 \rightarrow \text{نه عدد}$$

$$\text{الف) } y = \sqrt{x^2(x+3)}$$

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

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

$$y = \frac{(x-1)(x+1)x^2(x-3)}{x^4 - 1}$$

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

$$D_f = (-\infty, -1] \cup [0, 3] \cup [3, +\infty)$$

$$\text{الف) } |x-2| \geq 3 \quad x \geq 5$$

$$\begin{array}{l} x-2 \leq -3 \\ x \leq -1 \end{array}$$

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

$$\text{ب) } 4 - |2-x| \geq 0$$

$$|2-x| \leq 4$$

$$D_f = [-2, 4]$$

$$\rightarrow -4 \leq 2-x \leq 4$$

$$-4 \leq -x \leq 2$$

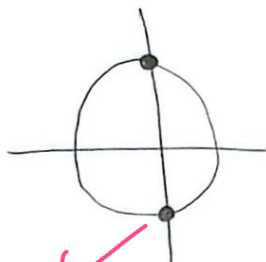
$$4 \geq x \geq -2$$

الف) $x \geq 0 \rightarrow 0 \leq x \leq 1$ ②

$x < 0 \rightarrow x|x| = -x^2$

$1+x^2 \geq 0$ ① $\cap$ ② = $D_f = (-\infty, 1]$
 $D_f = \mathbb{R}$ ①

الف) $\cos x \neq 0$



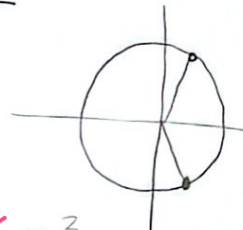
$D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

ب) $\mu - |x - a| \geq 0$

$-|x - a| \geq \sqrt{\mu - |x - a|} \neq 1$
 $|x - a| \leq \mu$ $\mu - |x - a| \neq 1$
 $- \mu \leq x - a \leq \mu$ $|x - a| \neq 1$
 $x \neq \mu + 1$

$\mu \leq x \leq 1$ $D_f = [\mu, 1] - \{\mu + 1\}$

ب) $\cos x \neq \frac{1}{\mu}$



$D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{\mu}\}$

$|x+1| \neq |x+\mu|$

$\begin{matrix} + \\ - \\ + \\ - \end{matrix}$

$\begin{matrix} + \\ - \\ + \\ - \end{matrix}$

$D_f = \mathbb{R} - \{x_0 - \frac{\mu}{\mu}\}$

$x+1 \neq x+\mu$ $-x-1 \neq -x-\mu$

$x \neq \mu$ $x \neq \mu$

$-x-1 \neq x+\mu$ $x+1 \neq -x-\mu$

$x \neq -\frac{\mu}{\mu}$

$x \neq -\frac{\mu}{\mu}$

$|x+1| \geq |x+\mu|$ $x \leq -\frac{\mu}{\mu}$ $x \geq \mu$

$(x+1)^2 \geq (x+\mu)^2$

$x^2 + 2x + 1 \geq x^2 + 2\mu x + \mu^2$

$x^2 - 2x - \mu^2 + 1 \geq 0$

$D = (-\infty, -\frac{\mu}{\mu}] \cup [\mu, +\infty)$

$(x+\mu)(x-1) \geq 0$

$\log_{1/a} \log_a(x-1) \geq 0$

$\frac{\log_a(x-1)}{\log_a(1/a)} \geq 0 \rightarrow 0 \leq \log_a(x-1) \leq 1$

$a^0 \leq x-1 \leq a^1$

$1 \leq x-1 \leq a$

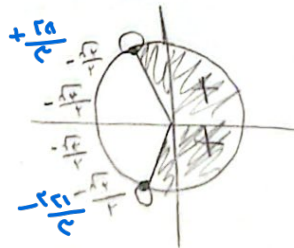
$1 < x \leq \mu$

$D_f = (1, \mu]$

الف) $y = \log_{1/a}(x \cos x + 1)$

$x \cos x + 1 > 0$

$\cos x > -\frac{1}{x}$



$D_f = (k\pi - \frac{\pi}{\mu}, k\pi + \frac{\pi}{\mu})$

ب) $y = \sqrt{\log \frac{x-1}{x+1}}$

$\frac{x-1}{x+1} > 0$

$\frac{x-1}{x+1} > 1$

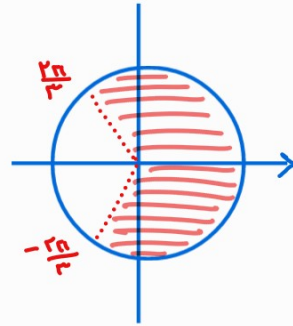
$\frac{x-1-x-1}{x+1} = \frac{-2}{x+1} > 0$

$D_f = (-\infty, -1)$

(۱) چون دامنه تک بازه است پس عبارت نمی‌تواند یک سهم باشد و باید یک خط باشد!

$$a - 2 = 0 \rightarrow a = 2 \rightarrow f(x) = \sqrt{2x + b} \quad D_f = [-3, +\infty) \rightarrow 2(3) + b = 0 \rightarrow \boxed{b = -6}$$

(الف - ۵) $2c \cdot \sin u + 1 > 0 \rightarrow c \cdot \sin u > -\frac{1}{2}$



$$\rightarrow D_f = (2k\pi - \frac{\pi}{6}, 2k\pi + \frac{\pi}{6})$$