

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

$$b = 18 - 12a$$

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

$$18 - 12a = 4a - 18$$

$$34 = 16a$$

$$a = \frac{17}{4} \rightarrow b = 18 - \frac{144}{4} = \frac{124 - 144}{4} = \boxed{-\frac{10}{4}}$$

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

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

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

$$x - x^2 \geq 0 \quad x^2 \leq x \rightarrow -1 \leq x \leq 1$$

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

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

$$\text{الف) } y = \sqrt{x^2(x+3)}$$

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

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

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

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

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

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

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

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

$$\text{ب) } 4 - |2-x| \geq 0$$

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

$$D_f = [-2, 6]$$

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

$$-4 \leq -x \leq 2 \quad \uparrow$$

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

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

$$x \geq 0 \rightarrow 0 \leq x \leq 1$$

$$x < 0 \rightarrow x \text{ in } |x| = -x^2$$

$$1+x^2 \geq 0 \quad ① \cap ② = D_f = (-\infty, 1]$$

$$D_f = \mathbb{R} \cap ①$$

الف) $\cos x \neq 0$



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

ب) $\mu - |x-a| - 1 \geq 0$

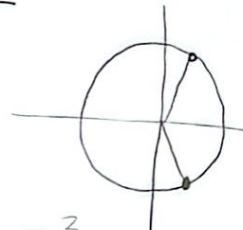
$$-|x-a| \geq \sqrt{\mu - |x-a|} - 1$$

$$|x-a| \leq \mu \quad \mu - |x-a| \neq 1$$

$$- \mu \leq x-a \leq \mu \quad x \neq \mu+1$$

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

ب) $\cos x \neq \frac{1}{\mu}$



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

$$|x+1| \neq |x+3|$$

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

$$D_f = \mathbb{R} - \left\{ 2, -\frac{4}{3} \right\}$$

$$x+1 \neq x+3 \quad x \neq 2$$

$$x+1 \neq -x-3 \quad x \neq -2$$

$$-x+1 \neq x+3 \quad x \neq -1$$

$$x \neq -\frac{4}{3}$$

$$|x+1| \geq |x+3| \quad x \leq -\frac{4}{3} \quad x \geq 2$$

$$= (x+1)^2 \geq (x+3)^2$$

$$x^2 + 2x + 1 \geq x^2 + 6x + 9$$

$$x^2 - 4x - 8 \geq 0 \quad D = \left(-\infty, -\frac{4}{3} \right] \cup [2, +\infty)$$

$$(x+2)(x-4) \geq 0$$

$$\log_{10} \log_{10} (x-1) \geq 0$$

$$\frac{\log_{10} (x-1)}{\log_{10} 10} \geq 0 \rightarrow 0 \leq \log_{10} (x-1) \leq 1$$

$$1 \leq x-1 \leq 10$$

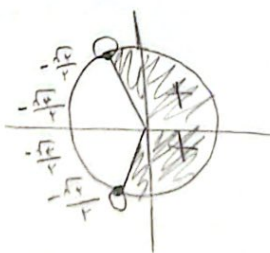
$$2 \leq x \leq 11$$

$$1 < x \leq 3 \rightarrow D_f = (1, 3]$$

الف) $y = \log_{10} (x \cos x + 1)$

$$x \cos x + 1 > 0$$

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



$$D_f = \left(k\pi - \frac{\pi}{x}, k\pi + \frac{\pi}{x} \right)$$

ب) $y = \sqrt{\log \frac{x-1}{x+1}}$

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

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

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