

$$\boxed{a=2}$$

$$2x+b \geq 0$$

$$4(2)+b \geq 0 \quad \boxed{b \geq -8}$$

شماره $a > 0$ ✓

$$\Delta < 0 \rightarrow f = f(r-m^2) < 0 \quad f = 1 + f m^2 < 0 \quad f m^2 = f < 0 \quad m^2 < 1 \quad -1 < m^2 < 1$$

$$\text{Max} - \text{Min} = 1 - (-1) = \boxed{2}$$

$$[x] + [-x] + 1 \neq 0$$

$$[x] + [-x] \neq -1$$

دارد هیچ IR

$$x \geq 0 \quad x^2 \leq x \quad -[x] \leq x$$

$$-2, -1, 0, 1, 2 \rightarrow \boxed{5a}$$

اعداد صحیح این قسمت را صفر
نکنند

$$1) \quad x^2 + 3x^2 \geq 0$$

$$x(x+3) \geq 0$$

$$\boxed{D_f = [-3, +\infty)}$$

$$\frac{-3 \pm \sqrt{9}}{-1 \pm 1}$$

$$2) \quad x-1 \neq 0$$

$$x^2 \neq 1$$

$$\boxed{x \neq 1}$$

$$\frac{(x-1)(x+1)(x^2)(x-3)}{(x-1)(x^2+x+1)} \geq 0$$

⊕ علامت

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

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

$$|x-2| - 3 \geq 0$$

$$x-2 \geq 3$$

$$\boxed{x \geq 5}$$

$$\boxed{D_f = (-\infty, -1] \cup [4, +\infty)}$$

1) ان

- a

$$x-1 \neq 0$$

$$x^r \neq 1$$

$$\boxed{x \neq 1}$$

$$\frac{(x-1)(x+1)(x^r)(x-r)}{(x-1)(x^r+x+1)} \geq 0$$

$$(x-1)(x^r+x+1)$$

⊕ add

$$\begin{array}{ccccccc} & & x & & & & \\ & & 0 & & & & \\ -1 & & & & & & r \\ \hline + & \phi & - & \phi & - & \phi & + \end{array}$$

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

$$|x-r|-r \geq 0$$

ω),

$$|x-r| \geq r$$

$$x-r \geq r$$

$$\boxed{x \geq d}$$

$$x-r \leq -r$$

$$\boxed{x \leq -1}$$

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

- d

$$|r-x| \geq 0$$

ω),

$$|r-x| \leq r$$

$$r-x \leq r$$

$$\boxed{-r \leq x}$$

$$-r \leq r-x$$

$$\boxed{x \leq 4}$$

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

- 4

$$|1-x|x| \geq 0$$

ω),

$$x|x| \leq 1$$

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

ω),

ω),

$$\sqrt{r-|x-d|} \neq 1$$

$$r-|x-d| \geq 0 \quad |x-d| \leq r$$

$$-r \leq x-d \leq r \quad r \leq x \leq r$$

$$\sqrt{r-|x-d|} \neq 1$$

$$r-|x-d| \neq 1$$

$$|x-d| \neq r$$

$$x \neq r$$

$$x \neq r$$

$$D_f = [r, r] - \{r, r\}$$

$$-r \leq x-d \leq r$$

$$r \leq x \leq r$$

$$\text{ii)} \cos x \neq 0$$

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

$$\Rightarrow r \cos x - 1 \neq 0$$

$$\cos x \neq \frac{1}{r}$$

$$D_f = \mathbb{R} - \left\{ rk\pi + \frac{\pi}{r}, rk\pi - \frac{\pi}{r} \right\}$$

$$\text{iii)} |rx+1| - |x+r| \neq 0$$

$$|rx+1| = |x+r|$$

$$rx+1 < x+r$$

$$\boxed{x > r}$$

$$rx+1 > x+r$$

$$\boxed{x < -\frac{r}{r-1}}$$

$$D_f = \mathbb{R} - \left\{ r, -\frac{r}{r-1} \right\}$$

$$\Rightarrow |rx+1| - |x+r| \geq 0$$

$$|rx+1| \geq |x+r|$$

$$(rx+1)^2 \geq (x+r)^2 \rightarrow rx^2+1+2rx \geq x^2+2rx+r^2$$

$$rx^2-rx-1 \geq 0$$

$$x^2-rx-r \geq 0$$

$$(x-r)(x+r) \geq 0$$

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

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

$$rx-1 > 0$$

$$rx > 1$$

$$\boxed{x > \frac{1}{r}}$$

$$\log_a^{(rx-1)} > 0$$

$$rx-1 > 1$$

$$rx > 2$$

$$\boxed{x > 2}$$

$$\log_a^{(rx-1)} \geq 0$$

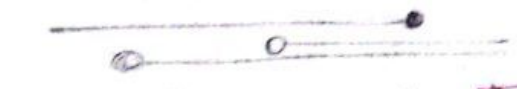
$$\frac{1}{r}$$

$$\log_a^{rx-1} < 1$$

$$rx-1 < a$$

$$rx < a+1$$

$$\boxed{x < \frac{a+1}{r}}$$



$$D_f = (1, 2]$$

$$\hookrightarrow |rx+1| - |x+r| \geq 0$$

$$|rx+1| \geq |x+r|$$

$$rx^2 - rx - 1 \geq 0$$

$$x^2 - rx - rf \geq 0$$

$$(x-c)(x+f) \geq 0$$

$$\frac{-\frac{r}{f}}{f} \quad \frac{r}{f}$$

$$D_f: (-\infty, -\frac{r}{f}] \cup [r, +\infty)$$

$$rx-1 > 0$$

$$rx > 1$$

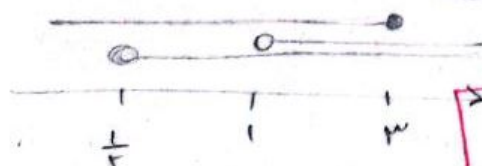
$$\boxed{x > \frac{1}{r}}$$

$$\log_a^{(rx-1)} > 0$$

$$rx-1 > 1$$

$$rx > 2$$

$$\boxed{x > 1}$$



$$D_f: (1, r]$$

$$\log_a^{(rx-1)} \geq 0$$

$$\log_a^{rx-1} \geq 1$$

$$rx-1 \geq r$$

$$rx \geq r+1$$

$$\boxed{x \leq r}$$

$$\omega) \quad r \cos x + 1 > 0$$

$$r \cos x > -1$$

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

$$D_f: (rK\pi - \frac{r\pi}{r}, rK\pi + \frac{r\pi}{r})$$

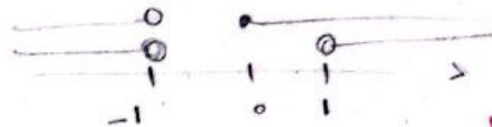
$$\hookrightarrow \frac{x-1}{x+1} > 0 \quad + \frac{-1}{f} \quad + \frac{1}{f}$$

$$\log_{x+1}^{x-1} \geq 0$$

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

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

$$+ \frac{-1}{f} \quad (-\infty, -1)$$



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