

۲. آزمون های نوستر

$$a=2$$

$$2x+b \geq 0$$

$$2(3)+b \geq 0 \quad \boxed{b \geq -4}$$

اعداد + $a > 0$ ✓

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

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

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

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

دارند خروج IR

$$x \geq 0 \quad x^2 \leq 4 \quad -2 \leq x < 2$$

$$-2, -1, 0, 1, 2 \quad \boxed{0 \leq x \leq 2}$$

اعداد صحیح این قسمت را صفر نکنند

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

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

$$\begin{array}{c} -3 \quad 0 \\ - \quad + \quad + \end{array}$$

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

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

$$x^2 \neq 1$$

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

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

⊕ علامت

$$\begin{array}{c} -1 \quad 0 \quad 1 \quad 3 \\ + \quad - \quad - \quad - \quad + \end{array}$$

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

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

$$x-2 \geq 3$$

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

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

1) ان

- d

$$x-1 \neq 0$$

$$x^r \neq 1$$

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

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

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

⊕ values

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

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

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

ii)

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

$$x-r \geq r$$

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

$$x-r \leq -r$$

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

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

- d

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

iii)

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

$$r-x \leq r$$

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

$$-r \leq r-x$$

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

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

- r

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

iv)

$$x|x| \leq 1$$

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

when 0

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

$$r \leq x \leq v$$

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

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

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

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

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

$$x \neq v$$

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

$$x \neq r$$

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

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

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

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

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

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

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

$$rx+1 < x+r$$

$$\boxed{x > r}$$

$$rx+1 > x+r$$

$$rx > x - 1$$

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

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

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

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

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

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

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

$$\frac{-\frac{r}{2} \pm \sqrt{\frac{r^2}{4} + r^2}}{2}$$

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

$$rx-1 > 0$$

$$rx > 1$$

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

$$\log_a(rx-1) > 0$$

$$rx-1 > 1$$

$$rx > 2$$

$$\boxed{x > \frac{2}{r}}$$

$$\log_a(rx-1) \geq 0$$

$$\log_a(rx-1) \leq 1$$

$$rx-1 \leq a$$

$$rx \leq a+1$$

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



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

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

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

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

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

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

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

$$rx-1 > 0$$

$$rx > 1$$

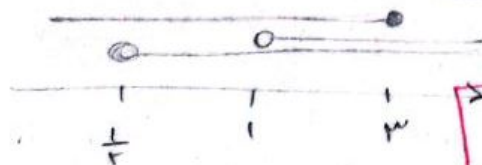
$$\boxed{x > \frac{1}{r}}$$

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

$$rx-1 > 1$$

$$rx > 2$$

$$\boxed{x > 1}$$



$$D_f = (1, r]$$

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

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

$$rx-1 \geq r$$

$$rx \geq r+1$$

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

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

$$r \cos x > -1$$

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

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

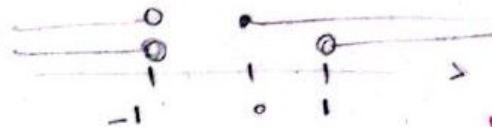
$$\hookrightarrow \frac{x-1}{x+1} > 0 \quad + \frac{-1}{f} \quad + \frac{1}{f}$$

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

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

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

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



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