

$$f(r) + f(r) = r + f(r) \rightarrow f(r) = r \quad f(rx+1) + f(x+r) = rx + r \quad (1)$$

$$\downarrow \quad \downarrow$$

$$rx+1 + x+r = rx+r \Rightarrow f(x) = x$$

$$y = \sqrt{x - x^2} \quad -\frac{b}{ra} = \frac{1}{r} \rightarrow \frac{r}{r} - \frac{1}{r} = \frac{1}{r} \rightarrow \sqrt{[-\infty, \frac{1}{r}]} \Rightarrow R_f = [0, \frac{1}{r}]$$

$$f(x) = \frac{x(x-r)(x+r)}{x+r} \rightarrow f(x) = x(x-r) = x^2 - rx \rightarrow -\frac{b}{ra} = 1 \quad y_{\min} = -1 \quad R_f = [-1, +\infty) \quad (2)$$

$$x^2 - rx = 1 \quad x \begin{matrix} \nearrow r \\ \searrow -r \end{matrix} \quad D_f = R - \{r, -r\} \quad R_f = [-1, +\infty) - \{1\}$$

$$\frac{a+b}{rc} = \frac{r}{-r} = -1 \quad f(-1) = 1 + r = 2$$

$$x^r + ax^r + bx - 1 = (x-r)^r \rightarrow x^r - 9x^r + 12x - 1 \quad a = -9 \quad b = 12 \quad (3)$$

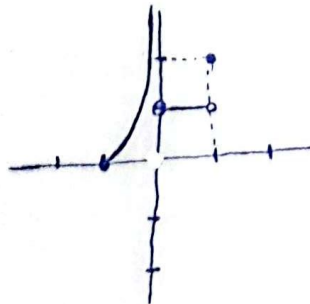
$$f(x) = x - r \quad D_f = [-9, 12] \quad \begin{matrix} -9 \rightarrow -1 \\ 12 \rightarrow 1 \end{matrix} \Rightarrow R_f = [-1, 1]$$

$$\frac{x+1}{1-x} \geq 0 \quad \frac{-1}{-1+1-} \quad D_{f_1} = [-1, 1) \quad \frac{a\Box + b}{c\Box + d}$$

$$\Box = x^r \begin{matrix} \nearrow \min = 0 \rightarrow y = -1 \Rightarrow \frac{-1}{b} = -1 \quad b = 1 \\ \searrow \max = +\infty \rightarrow y = 1 \Rightarrow a = 1 \end{matrix} \quad a + b = 2$$

$$-1 \leq x < 0 \rightarrow \frac{-1}{x} - 1$$

$$0 < x < 1 \rightarrow 1$$

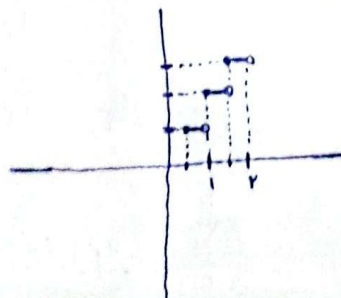


آزمایش نوری

$$\frac{1}{r} \leq x < \frac{2}{r} \rightarrow 1$$

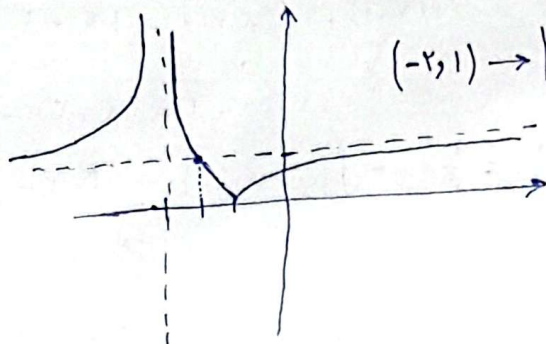
$$1 \leq x < \frac{3}{r} \rightarrow 1 + 1 = 2$$

$$\frac{2}{r} \leq x < \frac{3}{r} \rightarrow 1 + 2 = 3$$



از ۳ باره حفظ تسلط شده!

$$a=1 \Rightarrow \left| \frac{x+1}{x+3} \right|$$



$$(-2, 1) \rightarrow \left| \frac{x+1}{x+3} \right| = 1 \rightarrow \frac{x+1}{x+3} = -1$$

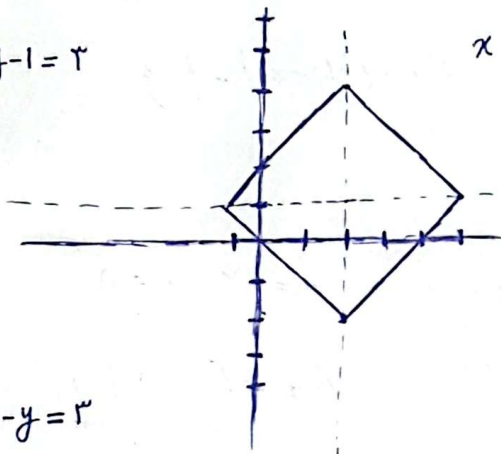
$$x+1 = -x-3 \quad 2x = -4$$

$$x = -2 \rightarrow \underline{b = -2}$$

$$a=1, b=-2 \Rightarrow \underline{a-b=3}$$

$$-x+2+y-1=3$$

$$y=x+2$$



$$x-2+y-1=3 \rightarrow y=-x+6$$

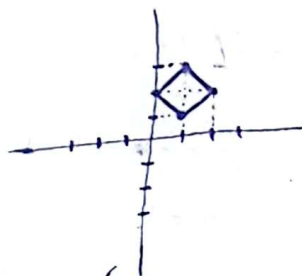
$$-x+2+1-y=3$$

$$y=-x$$

$$x-2+1-y=3 \rightarrow y=x-4$$

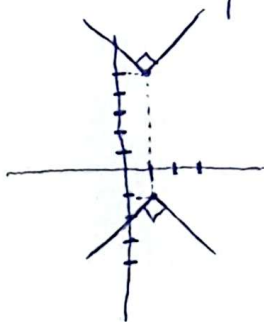
$$\text{الف) } |x-1| + |y-2| = 1$$

$$\begin{vmatrix} 1 & 1 \\ 2 & 2 \end{vmatrix}$$



$$\text{ب) } |y-2| - |x-1| = 3$$

$$\begin{vmatrix} 1 & 1 \\ 2 & -1 \end{vmatrix}$$



آزمین نوری

$$y=3x+|ax+b| \quad a=2, -3 \rightarrow a \neq \pm 3 \text{ و } b \neq 0 \text{ و } a \neq \pm 1$$

اگر a را بیشتر از ۳ یا کمتر از -۳ بگیریم به تابع R نمی شود پس

$$\Downarrow$$

$$\underline{a \in (-3, 3)}$$