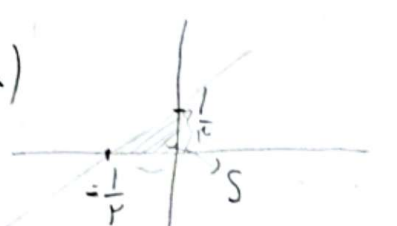


نام و نام خانوادگی آدرس شماره کلاس (در ازام پس B)

$$2y = 3x - 1 \Rightarrow \frac{2y+1}{2} = x \Rightarrow y = \frac{3x+1}{2}$$

$$\frac{3x+1}{2} = 0 \Rightarrow x = -\frac{1}{3}$$

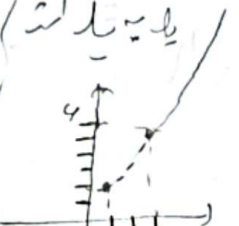
$$\left(-\frac{1}{3}, \frac{1}{2}\right)$$


$$\frac{1}{3} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{12}$$

الف

$$(x^2 - 2x + 1) + 2 = (x-1)^2 + 3$$

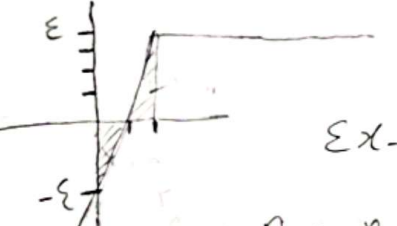
$$x^2 - 2x + 3 = (x-1)^2 + 3$$

$$R_f = D_f = [2, +\infty)$$


$$2x - \sqrt{14 + 4x^2 - 14x} : 2x - \sqrt{(x-4)^2} = 2x - |x-4|$$

$$2x - 2x + 4 = 4$$

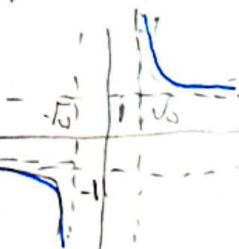
$$4x - 4 = y \Rightarrow y + 4 = 4x \Rightarrow x = \frac{y+4}{4}$$

$$D_{f^{-1}} = R_f = (-\infty, 4]$$


اگر بخواهیم تابع را رسم کنیم $\pm \sqrt{\dots}$ مجانب های قائم آن $x=5$ و $y=0$ را می بینیم

$$x = \sqrt{x^2 - 5} \Rightarrow x^2 = x^2 - 5 \Rightarrow 0 = -5$$

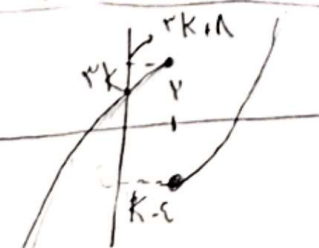
$$\frac{x}{x^2-5} = y \Rightarrow \frac{x^2}{x^2-5} = y^2 \Rightarrow \frac{y^2}{y^2-1} = \frac{x^2}{x^2-5}$$

$$x = \sqrt{\frac{5y^2}{y^2-1}}$$


چون x و y هم علامتند پس فقط از $x \geq 5$ و $y > 0$ استفاده می کنیم

$$g(x) = \begin{cases} x^2 - 4x + k & x \geq 2 \\ -x^2 + 4x + 12 & x < 2 \end{cases}$$

$$x^2 - 4x + k = 0 \Rightarrow x = 2 \pm \sqrt{4-k}$$

$$-x^2 + 4x + 12 = 0 \Rightarrow x = 2 \pm \sqrt{16-k}$$


 $f(x) = \begin{cases} \varepsilon x; & x \geq 0 \\ \nu x; & x < 0 \end{cases}$	$f^{-1} = \begin{cases} \frac{x}{\varepsilon}; & x \leq 0 \\ \frac{x}{\nu}; & x > 0 \end{cases} \Rightarrow f^{-1} = \frac{\nu}{\lambda} x - \frac{ \lambda }{\lambda}$ $a = \frac{\nu}{\lambda} \quad b = -\frac{1}{\lambda}$ $ab = -\frac{\nu}{\varepsilon \lambda}$
$\frac{\nu x + \varepsilon}{x + \nu} \stackrel{x=\nu}{=} \frac{1_0}{\nu + \nu} = -1_0 \Rightarrow m = -\nu \rightarrow f(x) = \frac{\nu x + \varepsilon}{x - \nu} = y \Rightarrow \frac{\nu y - \varepsilon}{y - \nu} = \frac{\nu y - \varepsilon}{y - \nu} = x$ $\stackrel{f^{-1}}{\Rightarrow} y = \frac{\nu x + \varepsilon}{x - \nu} \rightarrow \stackrel{f^{-1}}{+} x = \frac{\nu x + \varepsilon}{x - \nu} + x = x \Rightarrow \frac{\nu x + \varepsilon}{x - \nu} = 0 \Rightarrow x = \frac{\varepsilon}{\nu}$ $D_{f^{-1}} = R_f \circ (R - \frac{a}{\varepsilon}) = R - \{ \nu \}$	
$f(\nu - \nu x) = \nu \cdot g\left(\frac{x}{\nu}\right) = t \Rightarrow f^{-1}(t) = \nu - \nu x \quad \nu \cdot g\left(\frac{x}{\nu}\right) = t \Rightarrow \nu - t = g\left(\frac{x}{\nu}\right)$ $\Rightarrow g\left(\frac{x}{\nu}\right) = \frac{x}{\nu} \Rightarrow \varepsilon g\left(\frac{x}{\nu}\right) = x \Rightarrow f^{-1}(t) = \nu - \varepsilon g^{-1}(\nu - t)$ $f^{-1}(t) + \varepsilon g^{-1}(\nu - t) = \nu \xrightarrow{t = -\nu} f^{-1}(-\nu) + \varepsilon g^{-1}(\varepsilon) = \nu$	
$-y = \frac{-\Delta x - 1\nu}{x + 1} \Rightarrow y = \frac{\Delta x + 1\nu}{x + 1} \xrightarrow{\Delta(x-1) + 1\nu} \frac{\Delta(x-1) + 1\nu}{x-1} - \nu = \frac{\Delta x + 1\nu - \nu x + \nu}{x-1}$ $\frac{\nu x + 4}{x-1} = y \rightarrow -\frac{y-4}{y-\nu} = \frac{y+4}{y-\nu} \xrightarrow{f^{-1}} g\left(\frac{x+4}{x-\nu}\right) \rightarrow \frac{x+4}{x-\nu} = \frac{\nu x + 4}{x-1}$ $x^2 + \omega x + 4 = \nu x^2 - \varepsilon x + 4x - 1\nu = x^2 - \nu x - 4 \xrightarrow{\text{coefficient}} + \frac{\nu}{1} \Rightarrow \nu$	
$x + \varepsilon[x] = y \rightarrow [x + \varepsilon[x]] = [y] \Rightarrow \omega[x] = [y] \xrightarrow{f^{-1}} \Delta[y] = [x] \Rightarrow [y] = \frac{[x]}{\omega}$ $[x + \varepsilon[x]] = y \Rightarrow y + \varepsilon[y] = x \Rightarrow y = [x] - \frac{\varepsilon}{\omega}[x] = g(x)$ $(f - g) = x + \varepsilon[x] - [x] + \frac{\varepsilon}{\omega}[x] = \boxed{x + \frac{\pi}{\omega}[x]}$	