

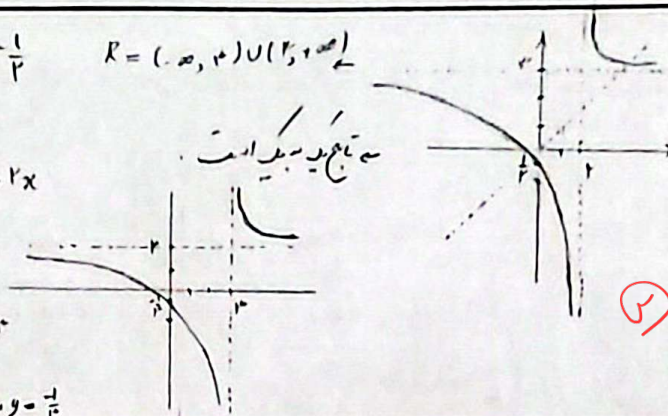
$$\begin{cases} \text{مجاورت: } x-2=0 \rightarrow x=2 & x=0 \rightarrow y = -\frac{1}{2} \\ \text{مجاورت: } \frac{a}{c} = 1^3 \end{cases} \quad R = (-\infty, 2) \cup (2, +\infty)$$

$$\begin{cases} \text{مجاورت: } \frac{a}{c} = 1^3 \end{cases}$$

$$x = \frac{y+1}{y-2} \rightarrow xy - 2x = y+1 \rightarrow xy - 1^3y = 1+2x$$

$$\rightarrow y(x-2) = 1+2x \rightarrow y = \frac{1+2x}{x-2}$$

$$D = (-\infty, 2) \cup (2, +\infty) \rightarrow \begin{cases} \text{مجاورت: } x-2=0 \rightarrow x=2 \\ \text{مجاورت: } \frac{a}{c} = 2 \end{cases} \quad x=0 \rightarrow y = -\frac{1}{2}$$



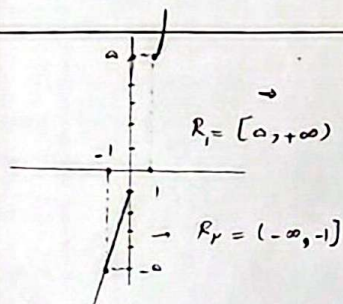
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$$f(x) = \begin{cases} x-1-(x-1) = 2 & x > 1 \rightarrow \text{برابر نیست} \\ x-1-(1-x) = 2x-2 & 1 \leq x \leq 1 \rightarrow \text{تقاطع} \\ 1-x-(1-x) = -2 & x < 1 \rightarrow \text{برابر نیست} \end{cases} \rightarrow [a, b] = [1, 1] \\ R = [-2, 2]$$

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$$x = 2y - 1 \rightarrow 2y = x + 1 \rightarrow y = \frac{x+1}{2}, \quad x \in [-1, 1]$$



داریم پذیرش داریم $\rightarrow$ تابع یک به یک

$$x = y^3 + 1 \rightarrow x - 1 = y^3 \Leftrightarrow y = \sqrt[3]{x-1} \\ D_1 = [0, +\infty)$$

$$f_y - 1 = x \rightarrow f_y = x + 1 \Rightarrow y = \frac{x+1}{1} \quad D_2 = (-\infty, -1]$$

$$f^{-1}(x) = \begin{cases} \sqrt[3]{x-1} & x \geq 0 \\ \frac{x+1}{1} & x \leq -1 \end{cases}$$

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

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

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$$\rightarrow y = \frac{-1-2x}{x+1^3} \quad f^{-1}(x) = \frac{ax+b}{cx+d} = \frac{-2-4x}{1^3x+1} \Rightarrow b = -2$$

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

$$f^{-1}(x) \rightarrow ax = \frac{y}{y^2+1} \rightarrow xy^2 + x = y \rightarrow xy^2 - y + x = 0 \rightarrow$$

$$\rightarrow (-1)^2 - f(x)(x) = 1 - f(x)^2 = \Delta \rightarrow y = \frac{1 \pm \sqrt{1-f(x)^2}}{1^3x}$$

$$f^{-1}(x) \rightarrow y = \frac{1 \pm \sqrt{1-f(x)^2}}{1^3x}$$

لذا چون x را هم علامت می دهیم

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