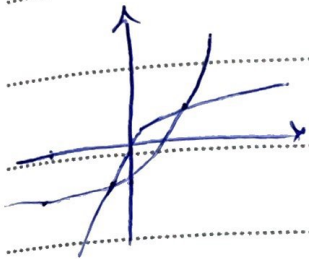


لایا ابراهیم تکیه شماره ۱۱



$$a^3 - 4 > 12a - 2$$

$$a^3 - 12a + 14 > (a^3 + 12a - 4a^2 - 1)$$

$$-24a + 24 + 4a^2 = (a-2)^2 + 4(a^2 - 4a + 4)$$

$$= (a-2)^2 (a+2)^2 < \frac{2}{-4}$$

$$\rightarrow a < -4 \text{ و } a > 4 \text{ است. اگر } a < -4 \text{ باشد یک یک است}$$

$$f(v) = w(v) - 10 = 11$$

$$w(3x-10) - 10 = 9x - 3 \rightarrow 9x = 4$$

$$3x + 5 \rightarrow 3x - 5 + 10 = 2 \rightarrow 10 = 2$$

$$2a = \frac{a^2}{a-1} \rightarrow 2a^2 - 2a = a^2 \rightarrow a^2 - 2a = 0 \rightarrow a(a-2) = 0$$

$$a = 0, a = 2$$

$$K = \{(5,5), (7,7), (2,2), (4,4)\}$$

$$L = \{(3,3), (4,4), (7,7), (9,9)\}$$

$$Z = \{(2,0), (5,4)\}$$

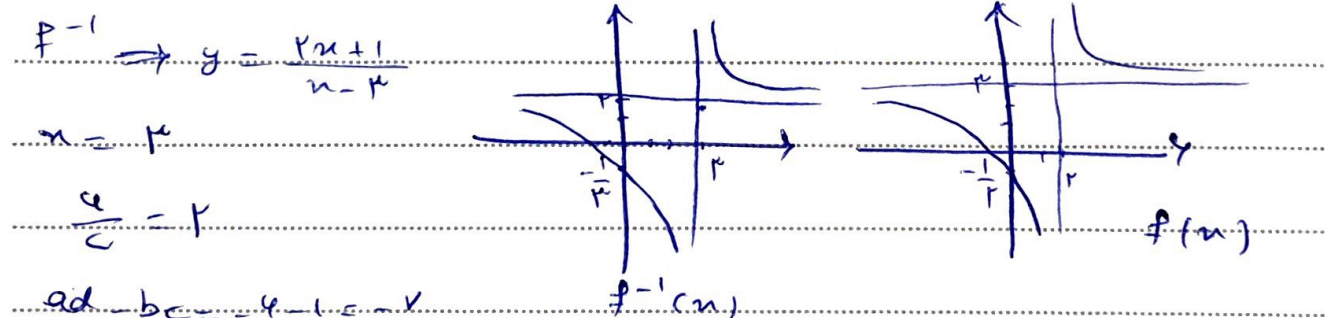
$$Y = \{(3,9), (7,3), (9,8)\}$$

$$g^{-1} = \{(1,2), (3,4), (5,4)\}$$

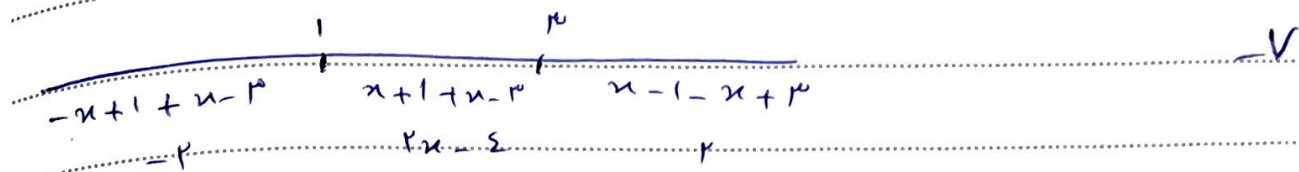
$$\frac{h}{f \circ g^{-1}} = \left\{ \left(1, \frac{2}{4}\right), \left(3, \frac{4}{8}\right), \left(5, \frac{4}{2}\right) \right\} \rightarrow \left\{ \left(1, \frac{1}{2}\right), \left(3, \frac{1}{2}\right) \right\}$$

$$f \circ g^{-1} = \{(1,4), (3,8), (5,0)\}$$

$$y = \frac{2x+1}{x-2} \quad ad \neq bc, \quad 3(-2) \neq 1, \quad -4 \neq 1$$



شهادت آیت الله قاضی طباطبائی اولین شهید محراب به دست منافقان (۱۳۵۸ هـ ش)



$$y = \begin{cases} r & x > r \\ rx - 2 & 1 \leq x \leq r \\ -r & x < 1 \end{cases}$$

$$y = rx - 2 \implies rx = y + 2 \implies x = \frac{y + 2}{r} \implies y = \frac{1}{r}x + r$$

$$a = 1, b = r \implies y = rx - 2$$

$$f(x) = \begin{cases} x^r + 1 & x > 1 \implies R = [1, +\infty) \\ rx - 1 & x \leq 1 \implies R = (-\infty, 1] \end{cases}$$

$$y = x^r + 2 \implies x^r = y - 2 \implies x = \sqrt[r]{y - 2} \implies y = \sqrt[r]{x - 2}$$

$$y = rx - 1 \implies rx = y + 1 \implies x = \frac{y + 1}{r} \implies y = \frac{x + 1}{r}$$

$$y = \begin{cases} \sqrt[r]{x - 2} & x > 2 \\ \frac{x + 1}{r} & x \leq -1 \end{cases}$$

$$f(x) = \frac{-3x-1}{x-3}$$

$$f^{-1}(x) = \frac{-3y-1}{y-3} \quad y = \frac{3x-1}{x+3} \rightarrow y = \frac{-4x-2}{3x+5}$$

$$f^{-1}(-2) = \frac{-3(-2)-1}{-2+3} = \textcircled{5} \quad x = \frac{(3^2 \cdot 3x^2 + 3x + 1)}{3x+5}$$

$$a = -4 \quad \frac{3^2 + 3x^2 - 3x^2 - 3x^2 - 3x - 1}{3x+5}$$

$$b = -2$$

$$d = 4$$

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

$$y^2x - y + x = 0 \rightarrow \Delta = 1 - 4x^2$$

$$y = \frac{1 \pm \sqrt{1-4x^2}}{2x} \quad \frac{-\frac{1}{2} \pm \frac{1}{2}}{-}$$

$$f^{-1}(x) = \frac{1 + \sqrt{1-4x^2}}{2x} \quad D_{f^{-1}} = \left[-\frac{1}{2}, \frac{1}{2}\right] - \{0\}$$