

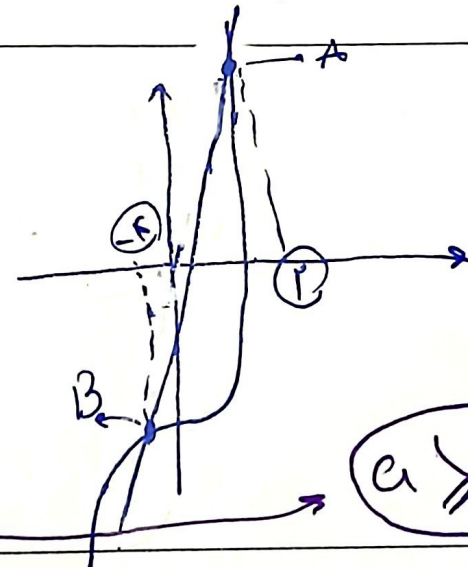
نام و نام خانوادگی: فرز سرانی پاسخنامه تشریحی تکلیف شماره ۱۱... کلاس: یازدهم سر A

$$f(x) = \begin{cases} x^3 - 4 & ; x > 0 \\ |2x - 2| & ; x \leq 0 \end{cases}$$

$$x^3 - 4 \rightarrow |2x - 2| \rightarrow x^3 - |2x - 2| + 4$$

$$\rightarrow (x-2)^3 + 4(x-2)^2 \rightarrow x^2 - 4x + 2$$

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



$$a \geq -4$$

$$f^{-1}(r) = \varepsilon \longrightarrow f(\varepsilon) = r \longrightarrow f(n), r_{n+k} \rightarrow r, |r+1| \rightarrow \underline{k=1.}$$

$$f(n), r_{n-1.} \rightarrow \underline{f(v), r_{n-1.} = 1}$$

$$f(f(n)) = f(r_{n-1.}) = r(r_{n-1.}) - 1. = \boxed{r_{n-1.} = f(f(n))}$$

r

$$f(n) = \frac{an}{n-1} \quad f^{-1} A(\gamma a, a) \longrightarrow f \longrightarrow A(a, \gamma a)$$

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

$$\longrightarrow \cancel{a \neq 0} \quad a = \gamma$$

μ

$$f(m) = \{(3,5), (4,6), (5,7), (6,8)\} \quad g(n) = \{(2,3), (1,4), (9,5)\}$$

الف) $f \circ f^{-1} = \{(4,4), (4,4), (5,5), (5,5)\}$

ب) $f^{-1} \circ f = \{(3,3), (4,4), (5,5), (6,6)\}$

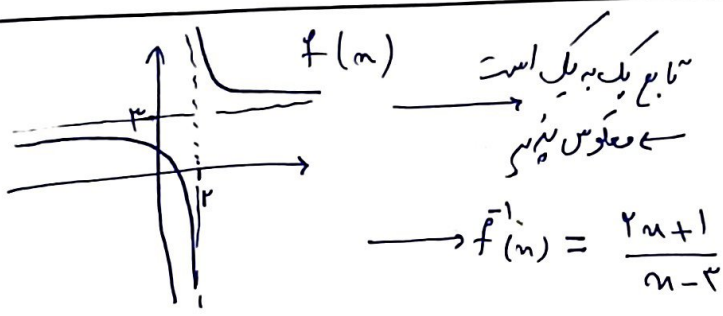
ج) $f \circ g^{-1} = \{(5,4), (2,5)\}$

د) $g^{-1} \circ f = \{(3,4), (4,3), (9,8)\}$

$$f = \{(1,2), (2,1), (4,0)\} \quad g = \{(2,1), (4,3), (4,5)\} \quad h = \{(1,2), (3,4), (4,1), (5,1)\}$$

$$\frac{h}{f \circ g^{-1}}$$

$$f \circ g^{-1} = \{(1,4), (2,1), (5,0)\} \rightarrow \frac{h}{f \circ g^{-1}} = \{(1, \frac{1}{4}), (3, \frac{1}{4})\}$$



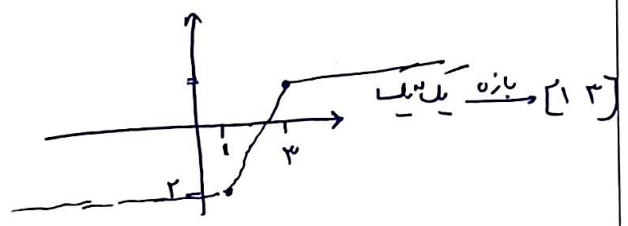
$$\frac{x+1}{x-2} = y \rightarrow -\frac{-2y-1}{y-2}$$

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

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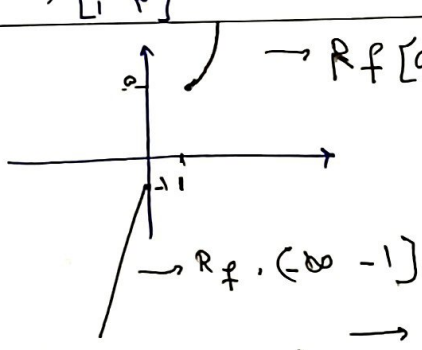
$$f(x) = |x-1| - |x-2|$$

$$\frac{-x+1+x-2}{-1} = \frac{x-1+x-2}{x-1} = \frac{x-1-x+2}{+1}$$



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$$f(x)_{[1,2]} = x-2 \rightarrow y+2 = x \rightarrow \frac{y+2}{1} = x \rightarrow f^{-1}(x) = \frac{x}{1} + 2$$



$$f^{-1}(x) = \begin{cases} \sqrt{x-4} & x \geq 4 \\ \frac{x+1}{2} & x \leq -1 \end{cases}$$

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

تابع یک به یک است

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

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

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

رابطه ایست
یک به یک نیست پس عکس آن
تابع نیست

رابطه معکوس

به ازای ۲ دو مقدار ۱/۵ به دست می آید