

بازرسی

در هر دو طرف

$$f = \{(1, 2), (n, 0), (2, n^2 - n), (m, 2), (-1, 1)\} \Rightarrow \begin{matrix} m=3 \\ n^2 - n = 2 \\ n^2 - n - 2 = 0 \\ (n-2)(n+1) \\ \begin{matrix} 2 \\ -1 \end{matrix} \\ \text{جواب} \end{matrix}$$

$$f = \{(-1, 1), (1, 2), (2, 3), (n, m-1), (n+1, n), (m, 2)\}$$

$$\begin{matrix} m=3 \\ n=1 \\ n=2 \end{matrix}$$

$$f(a) = \begin{cases} a^2 - 1 & ; a > 1 \\ a^2 + a - 1 & ; a \leq 1 \end{cases}$$

$$\begin{pmatrix} 1 & +\infty \\ -\infty & 1 \end{pmatrix} \Rightarrow a=1 \Rightarrow a = (-\infty \quad 1]$$

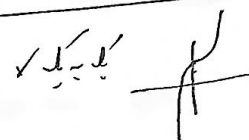
$$f(a) = \begin{cases} a^2 - 1 & ; a > 1 \\ a^2 + a - 1 & ; a \leq 1 \end{cases}$$

$$\begin{pmatrix} 1 & +\infty \end{pmatrix}$$

$$\begin{pmatrix} -\infty & 1 \end{pmatrix}$$

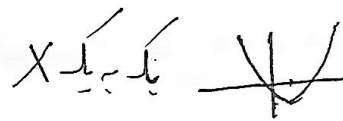
$$\begin{pmatrix} 0 & 3 \end{pmatrix}$$

$$y = x^2 + 2 \Rightarrow x = y^2 + 2 \Rightarrow y^2 = x - 2 \Rightarrow y = \sqrt{x-2}$$

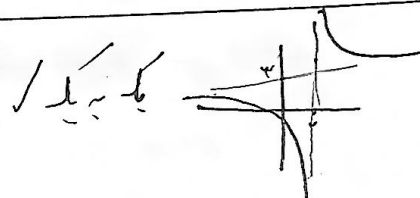


$$y = x^2 - (x+2)$$

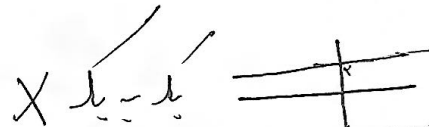
$$\begin{matrix} 1 \\ -2 \end{matrix}$$



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



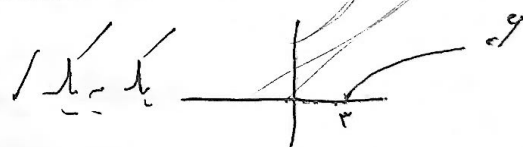
$$y = \frac{x+2}{x+2} \Rightarrow \frac{x+2}{x+2}$$



$$y = \sqrt{x-2}$$

$$\begin{aligned} \sqrt{x-2} &= \sqrt{x-2} \\ |x-2| &= |x-2| \\ |x-2| &= |x-2| \end{aligned}$$

$$\begin{aligned} |a| &= |a| \\ a_1 &= \pm a_2 \Rightarrow a_1 = a_2 \\ \text{جواب} \end{aligned}$$

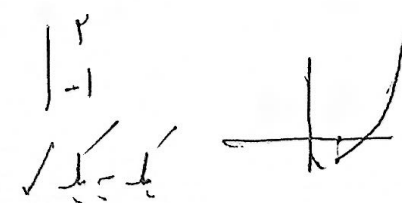


$$x = \sqrt{y-2} \Rightarrow x^2 = |y-2| \Rightarrow x^2 + 2 = |y| \Rightarrow y = x^2 + 2 ; x > 0$$

$$y = x^2 - (x+2) ; x > 2$$

$$\begin{aligned} x &= y^2 - (y+2) \\ x &= (y-1)^2 - 1 \end{aligned}$$

$$\begin{aligned} (y-1)^2 &= x+1 \\ y-1 &= \sqrt{x+1} \end{aligned}$$



$$y = \sqrt{x+1} + 1$$

$$f(x) = a + \sqrt{x} \quad 2).$$

$$f^{-1}(a) = ax + b = \sqrt{x-6}$$

$$x = y + \sqrt{y}$$

$$\left(\sqrt{y} + \frac{1}{\sqrt{y}}\right)^2 = \frac{1}{f} = x$$

$$\sqrt{y} + \frac{1}{\sqrt{y}} = \sqrt{x + \frac{1}{f}}$$

$$\sqrt{y} = \sqrt{x + \frac{1}{f}} - \frac{1}{\sqrt{y}} \implies y = x + \frac{1}{f} + \frac{1}{f} - \frac{2}{\sqrt{y} \sqrt{x + \frac{1}{f}}} \implies y = x + \frac{1}{f} - \frac{2}{\sqrt{y} \sqrt{x + \frac{1}{f}}}$$

$$a = 1$$

$$b = \frac{1}{f}$$

$$c = -\frac{1}{f}$$

$$|x-1| = 1 \quad (1)$$

$$y = \frac{x}{x^2 - 2}$$

$$y_1 = \frac{x_1}{x_1^2 - 2}$$

$$y_2 = \frac{x_2}{x_2^2 - 2}$$

$$\frac{x_1}{x_1^2 - 2} = \frac{x_2}{x_2^2 - 2}$$

$$\frac{x_1^2}{x_1^2 - 2} = \frac{x_2^2}{x_2^2 - 2}$$

$$\frac{x_1^2}{x_1^2 - 2} = \frac{x_2^2}{x_2^2 - 2} \implies x_1^2 = x_2^2$$

ما لمصر ملصق بدون صورت و طرح برای متغیر قیاس است پس تابع یک به یک ✓

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

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

$$g(x) = \sqrt{x} - 1$$

$$f\left(-\frac{x}{a}\right) + g^{-1}\left(-\frac{x}{a}\right)$$

$$-\frac{x}{a} + \frac{a}{x} = \frac{-x^2 + a^2}{ax} = -\frac{x^2 - a^2}{ax}$$

$$\frac{x}{1+|x|} = -\frac{x}{a} \implies -ax = x^2 + |x|$$

$$-x^2 = x^2 + |x| \implies -2x^2 = |x| \implies x = -\frac{1}{\sqrt{2}}$$

$$\sqrt{x} - 1 = -\frac{x}{a} \implies \sqrt{x} = -\frac{x}{a} + 1 \implies x = \frac{a^2}{x}$$

$$f^{-1}(x) = \sqrt{x-1}$$

$$g(x) = f(x) + \sqrt{f(x)}$$

$$g^{-1}(12) = (2)$$

$$f(x) + \sqrt{f(x)} = 12$$

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

$$x-1 + \sqrt{x-1} = 12 \implies x-1 = 11 \implies x = 12$$

$$\sqrt{f(x)} = 2$$

$$x + \sqrt{x} = 12$$

$$(x + \sqrt{x})(x - \sqrt{x}) = 0$$

$$x = -\sqrt{x} \quad x = \sqrt{x}$$

$$\sqrt{f(x)} = -2 \quad \sqrt{f(x)} = 2 \quad f(x) = 9$$

$$f(x) = 9$$