

$$y = n + [n] \Rightarrow [y] = 2[n]$$

$$[y] = 2(y - n) = 2y - 2n$$

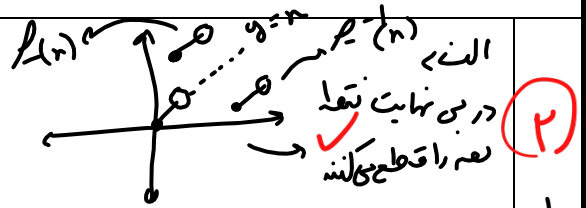
$$\text{و از این } [n] = 2n - 2y$$

$$2y = 2n - [n] = f^{-1}(n) = n - \frac{[n]}{2}$$

$$f \circ f^{-1}(n) = n$$

$$n = 2n - \frac{2}{2} \Rightarrow n = \frac{2}{2} \Rightarrow n \notin \mathbb{R}_f$$

معادله جواب ندارد ✓



$$\frac{a}{x} = \frac{-b}{x} \Rightarrow f = f^{-1}$$

$$f \circ f(n) = f \circ f^{-1}(n) = n$$

$$\Rightarrow f \circ f(\Delta - \sqrt{4}) = \Delta - \sqrt{4} \checkmark$$

$$f^{-1}(n) = \frac{-(m+3)n+3}{n-m}$$

$$f^{-1}(n) = f(n) \Rightarrow \frac{-(m+3)n+3}{n-m} = \frac{mn+3}{n+m}$$

$$\Rightarrow (-2m-3)n^2 - 3mn + 4m = 0 \Rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha+\beta}{\alpha\beta} = \frac{\frac{3m}{-2m-3}}{\frac{4m}{-2m-3}} = 1$$

$$f(n) = |2n+1| - |2n-2|$$

$$f(n) = \begin{cases} -3n+5; n > \frac{5}{2} \\ 3n-3; -\frac{3}{2} < n < \frac{5}{2} \\ 3n-5; n \leq -\frac{3}{2} \end{cases} \rightarrow R = (-\infty, 5/2) \cup [5/2, \infty)$$

$$y = -3n+5 \xrightarrow{\text{و از این}} n = -\frac{3}{2}y+5$$

$$y = \frac{5-n}{3} \Rightarrow f^{-1}(n) = \frac{5-n}{3} \quad n \leq 5/2 \checkmark$$

$$g(n) = 2f(3n) - 1$$

$$y = 2f(3n) - 1$$

$$\text{و از این } n = \frac{1}{2}f(3y) - 1$$

$$\frac{n+1}{2} = f(3y) \quad a = \frac{1}{2} \quad d = 0$$

$$\frac{1}{2}f^{-1}\left(\frac{n+1}{2}\right) = y \Rightarrow b = 1 \quad c = 2$$

$$\frac{ac+d}{2b} = \frac{1}{2} \checkmark$$

$$y = (\sqrt{n} + 1)^2 - 1$$

$$\text{واری} \rightarrow n = (\sqrt{y} + 1)^2 - 1$$

$$y = (\sqrt{n+1} - 1)^2$$

$$y = n + 2 - 2\sqrt{n+1} \Rightarrow f^{-1}(n) = n + 2 - 2\sqrt{n+1} \quad \checkmark \quad D_{f^{-1}} = R_f = [0, +\infty)$$

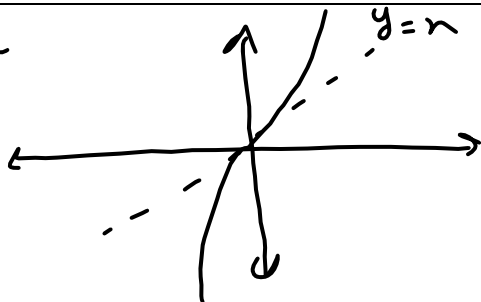
$$f(n) \text{ معکوس می باشد} \Rightarrow f(n) = f^{-1}(n) = n$$

$$\Rightarrow n - 1 + 2^n = n \Rightarrow 2^n = 1 \Rightarrow n = 0 \quad \checkmark$$

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$$f(n) = n^2 + 5n$$

$$\text{معکوس} \quad n = 0$$



$$\Rightarrow f^{-1}(n) > n \Rightarrow n \in (-\infty, 0]$$

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

$$\Rightarrow f^{-1}(n) > n \Rightarrow n \in (-\infty, 0] \Rightarrow \text{این یک دامنه صحیح در این حالت است} \quad \checkmark$$

$$f(n) = -(\sqrt{n+4} - \frac{1}{4})^2 + \frac{14}{4} \Rightarrow f^{-1}(n) = (\sqrt{\frac{14}{4} - n} + \frac{1}{4})^2 - 4$$

$$f^{-1}(n+4) = (\sqrt{\frac{1}{4} - n} + \frac{1}{4})^2 - 4 = \frac{1}{4} - n + \frac{1}{4} + \sqrt{\frac{1}{4} - n} = g(n)$$

$$g(n) = n - 2$$

$$n - 2 = \frac{1}{4} - n + \sqrt{\frac{1}{4} - n} \Rightarrow 2n - 2\frac{1}{4} = \sqrt{\frac{1}{4} - n}$$

معکوس

پس

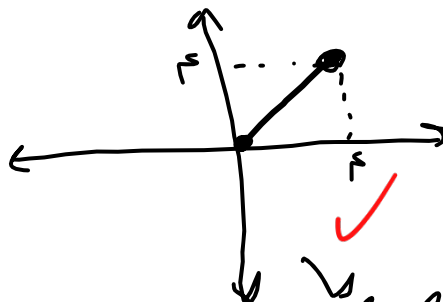
این یک معادله صحیح است

$$\sqrt{n} + \sqrt{y} = 2$$

$$\text{واری} \rightarrow \sqrt{y} + \sqrt{n} = 2 \Rightarrow f = f^{-1}$$

$$f \circ f(n) = f \circ f^{-1}(n) = n$$

$$2 \geq n \geq 0$$



$$f \circ f(n)$$

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۳) توابع همولوفیک آنر بدون خود را قطع نشد، کل تقاطع روی نیمه از ناحیه اول و دوم

است!

$$\frac{mn + 3}{n + m + 3} = u \rightarrow n^2 + 3n - 3 = 0$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{S}{P} = \frac{-3}{-3} = 1$$