

۲۰ آفرین!

مضای نهایی

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

(۲)

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

$$n - 2[n] = n + [n] \rightarrow 3[n] = 0 \rightarrow n = [0] \rightarrow \checkmark$$

$$\rightarrow n = 2n - \frac{2}{2} \rightarrow n = \frac{2}{2} \rightarrow f \circ f^{-1}\left(\frac{2}{2}\right) = \frac{2}{2} \rightarrow \checkmark$$

$$f \circ f^{-1}(a) = a \rightarrow \frac{a}{2} = \frac{-b}{2} \rightarrow a = -b \rightarrow a + b = 0 \rightarrow f = f^{-1}$$

$$f \circ f(a - \sqrt{4}) = f \circ f^{-1}(a - \sqrt{4}) = a - \sqrt{4} \checkmark$$

$$\frac{m\alpha + \gamma}{n + m + \gamma} = n \rightarrow m\alpha + \gamma = n^2 + m\alpha + \gamma n \rightarrow \alpha^2 + \gamma n - \gamma = 0$$

$$\rightarrow \delta = -\gamma, \rho = -\gamma$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{\gamma}{\rho} = \frac{-\gamma}{-\gamma} = 1 \checkmark$$

$$f(n) = |2n + 5| - |5n - 2|$$

$$\frac{-\frac{5}{2}}{2n+5} \quad \frac{\frac{2}{5}}{5n-2}$$

$$f(n) = -2n + 7, n \geq \frac{5}{2}$$

$$f^{-1}(n) = \frac{n-7}{-2}, n \leq \frac{19}{2} \checkmark$$

Arman

$$g(x) = y \rightarrow g^{-1}(y) = x \quad (a)$$

$$y = r f(rn) - 1 \rightarrow f(rn) = \frac{y+1}{r} \rightarrow rn = f^{-1}\left(\frac{y+1}{r}\right)$$

$$\rightarrow n = \frac{1}{r} f^{-1}\left(\frac{y+1}{r}\right) \quad \underline{g^{-1}(y) = n} \quad g^{-1}(y) = \frac{1}{r} f^{-1}\left(\frac{y+1}{r}\right) \rightarrow a = \frac{1}{r}, b = 1$$

$$c = r, d = 0$$

$$\rightarrow \frac{r \times \frac{1}{r} + 0}{r \times 1} = \frac{1}{r} \quad \checkmark$$

$$y = n + r\sqrt{n} + 1 - 1 \rightarrow y = (\sqrt{n} + 1)^r - 1 \rightarrow (\sqrt{n} + 1)^r = y + 1 \quad (b)$$

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

(c) چون تابع معکوس است پس باید $y = n$ مع n (c)

$$n - 1 + r^n = n \rightarrow r^n = 1 \rightarrow n = 0 \quad \checkmark$$

$$f^{-1}(n) = t \rightarrow f(t) = n = t^r + ct \quad (d)$$

$$f^{-1}(n) = n \geq 0 \rightarrow t - (t^r + ct) \geq 0 \rightarrow t^r + ct \leq 0 \rightarrow t(t^{r-1} + c) \leq 0$$

$$\frac{0}{-0.4} \rightarrow t = (-\infty, 0] \rightarrow \checkmark$$

$$f^{-1}(n+c) = n-r \rightarrow f(n-r) = n+c \rightarrow f(t) = t+r$$

$$\rightarrow -t + \sqrt{t+c} = t+r \rightarrow (t+r)^2 = t+c \rightarrow rt^2 + (rt+c) = 0$$

$$\rightarrow t = \frac{-rt \pm \sqrt{r^2t^2 - 4r(c+rt)}}{2r} \rightarrow t = -r, -r, \sqrt{c}$$

$$\checkmark$$

Arman

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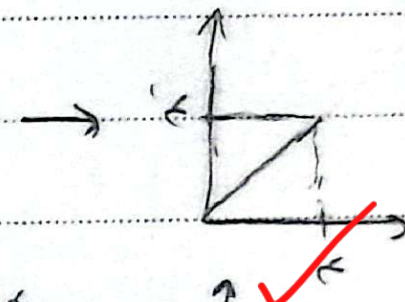
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$$\sqrt{y} = r - \sqrt{x} \rightarrow y = (r - \sqrt{x})^2 \rightarrow f \circ f(x) = (r - \sqrt{(r - \sqrt{x})^2})^2 \quad (1.)$$

$$f \circ f(x) = (r - |r - \sqrt{x}|)^2 \rightarrow (r - r + \sqrt{x})^2 = f \circ f(x)$$

$$\rightarrow f \circ f(x) = |x| \rightarrow x \geq 0 \rightarrow$$



$$r - \sqrt{x} \geq 0 \rightarrow \sqrt{x} \leq r \rightarrow x \leq r^2$$