

$$\text{الف) } x + [x] = y \quad x = y + [x] \rightarrow [x] = [y + [x]] \quad [x] = r[y]$$

$$[y] = \frac{[x]}{r} \quad x = y + \frac{[x]}{r}$$

بزرگوار

$$f^{-1}(x) = x - \frac{[x]}{r} \quad f^{-1}(x) = f(x) \quad x - \frac{[x]}{r} = x + [x] \quad \frac{r[x]}{r} = 0$$

$$[x] = 0 \quad \text{بسیار ساده}$$

$$\text{ب) } f \circ f^{-1}(x) = x \quad x = rx - \frac{r}{r} \quad x = \frac{r}{r}$$

$$f(x) = f^{-1}(x) \quad \text{سوال با توجه به}$$

$$f \circ f(x) = f \circ f^{-1}(x) = x \quad f \circ f^{-1}(x - \sqrt{4}) = x - \sqrt{4}$$

-۳

$$\frac{mx + r}{x + m + r} = x \quad x^r + mx + rx = mx + r \quad x^r + rx - r = 0$$

$$\frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} = \frac{-r}{-r} = 1$$

$$f(x) = |rx + a| - |ax - r| \rightarrow \frac{-\frac{a}{r}}{\frac{r}{a}} \quad \text{بزرگوار}$$

$$y = -rx + v \quad x = -ry + v$$

$$ry = -m + v \quad y = -\frac{1}{r}m + \frac{v}{r} \quad f^{-1}(x) = -\frac{1}{r}x + \frac{v}{r} \quad \text{بزرگوار}$$

$$f(x) = m + r\sqrt{x+1} - 1 \quad f(x) = (\sqrt{x+1})^r - 1 \quad m = (\sqrt{y+1})^r$$

$$y = \sqrt{m+1} - 1 \quad r$$

$$f^{-1}(m) = (\sqrt{m+1} - 1)^{\frac{1}{r}} \quad \text{بزرگوار}$$

$$g(x) = f \quad g^{-1}(x) = x \quad \frac{b+1}{r} = f(rx) \quad x = \frac{f^{-1}(b+1)}{r}$$

$$g^{-1}(x) = \frac{1}{r} f^{-1}\left(\frac{b+1}{r}\right) + 0$$

-۵

$$f(x) = x + \sqrt{x+1} - 1 \quad f(x) = (\sqrt{x+1})^p - 1 \quad x = (\sqrt{y} + 1)^p - 1 \quad -4$$

$$y = (\sqrt{x+1} - 1)^p \quad f^{-1}(x) = (\sqrt{x+1} - 1)^p \quad x \geq 0$$

get
p.c. u
case

$$x-1 + \sqrt{x} = x \quad \sqrt{x} = 1 \quad x = 0$$

bei u
in f(x)

$$-v$$

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

$$\sqrt{y} = \sqrt{x} \quad y = (x - \sqrt{x})^p \quad y = (x - \sqrt{x - \sqrt{x}})^p$$

$$y = (x - x + \sqrt{x})^p \quad y = x \rightarrow x \geq 0$$

-10

