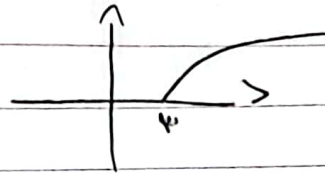


$$y = \sqrt{x-1} \Rightarrow x = \sqrt{y+1}$$

الف

$$x^2 + 1 = y$$



$$x^2 - 4x + 1 = 0 \Rightarrow y = x^2 - 4x + 1 - 1$$

ب

$$y = (x-2)^2 - 1 \Rightarrow x = (y+1)^2 - 1$$

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

کتابت اس

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

9

$$f\left(-\frac{1}{a}\right) + g\left(-\frac{1}{a}\right) \Rightarrow -\frac{1}{a} = \frac{x}{1+|x|} \quad x < 0$$

$$ax = -1 + 1x \Rightarrow 1x = -1 \quad x = -\frac{1}{1}$$

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

$$-\frac{1}{1} + \frac{1}{1a} = \Rightarrow \frac{-1a}{a}$$

$$f^{-1}(x) = \sqrt[3]{x-1}$$

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

10

$$y = \sqrt[3]{x-1}$$

$$g(x) = x^3 + 1 + \sqrt{x^3 + 1}$$

$$y^3 + 1 = x$$

$$12 = x^3 + 1 + \sqrt{x^3 + 1}$$

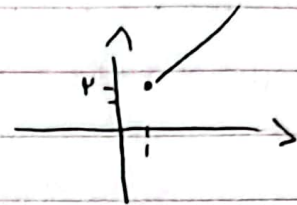
$$x^3 + 1 = y$$

$$x = 1 \Rightarrow 9 + \sqrt{9}$$

$$f(x) = x^3 + 1$$

متنی برآید

$$f(x) = \begin{cases} 3x-1 & x \geq 1 \\ x+a & x < 1 \end{cases}$$



(۲)

$$1-a \leq 2 \Leftrightarrow a \leq 1$$

$$f(x) = \begin{cases} 2x-1 & x \geq 1 \\ 11x+a-1 & x < 0 \end{cases}$$



(۳)

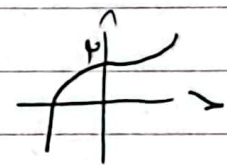
$$a-1 \leq 2 \Rightarrow a \leq 3$$

$$a > 0 \quad \text{و} \quad a < 3$$

$$y = x^3 + 2 \quad \text{یک به یک نیست}$$

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

(۴ الف)



$$y = x^2 - 4x + 2$$

یک به یک نیست

(ب)

$$y = \frac{3x+1}{a-2} \quad \text{یک به یک است} \quad \text{الف (۵)}$$

$$yx - 2y = 3x + 1 \Rightarrow x = \frac{2y+1}{y-3}$$

$$x(y-3) = 2y+1$$

$$y = \frac{2x+1}{x-3}$$

$$y = \frac{4+2x}{x+2} = 2 \quad \text{یک به یک نیست} \quad \text{ب (۶)}$$