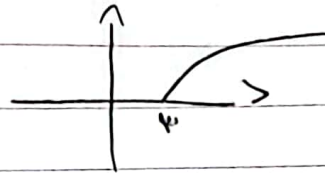


$$y = \sqrt{x-1} \Rightarrow x = \sqrt{y+1}$$

الف

$$x^2 + 1 = y$$



ب

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

ب

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

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

کتاب اس

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

ج

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

د

$$ax = -1 + 4x \Rightarrow 3x = -1 \Rightarrow x = -\frac{1}{3}$$

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

$$-\frac{1}{3} + \frac{1}{3a} = \frac{-13}{30}$$

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

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

د

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

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

ه

$$y^3 + 1 = x$$

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

$$x^3 + 1 = y$$

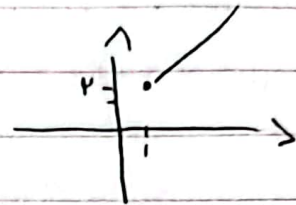
$$x = 2 \Rightarrow 9 + \sqrt{9}$$

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

(13, 10)

متی برآید

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

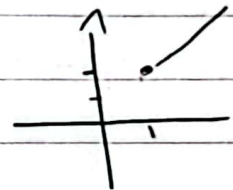


(2)

(5)

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

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



(3)

(5)

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

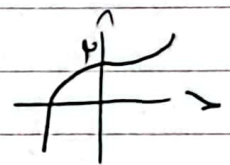
$$a > 0 \quad \text{and} \quad a < 3$$

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

$$x = y^3 + 2 \Rightarrow y = \sqrt[3]{x-2}$$

(4 الف)

(5)



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

یک به یک نیست

(ب)

$$y = \frac{3x+1}{a-2} \quad \text{یک به یک است} \quad \text{تابع هوگرافیک}$$

(5 الف)

$$yx - 2y = 3x + 1 \Rightarrow x = \frac{4y+1}{y-3}$$

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

(5)

$$y = \frac{3x+1}{x-3} \quad \text{یک به یک نیست}$$

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

(ب)