

۱۹, ۷۵

نام و نام خانوادگی: سپهر قیاریزاده پاسخنامه تشریحی تکلیف شماره ۱۰: کلاس: B

$$\begin{aligned} (3, 2) (m, 2) &\Rightarrow m=3 \\ (2, 2) (2, n-1) &\Rightarrow n=-1 \\ &\quad \downarrow \\ &\quad (-1, 2) \\ &\quad (n, 2) \end{aligned}$$

$$\begin{aligned} (m, 2) (2, 2) &\Rightarrow m=2 \\ (-1, 1) (a, m-1) &\Rightarrow a=-1 \\ (1, 2) (a+1, n) &\Rightarrow n=2 \end{aligned}$$

$$3(1)-1=2$$

$$x < 1, x = a < 2 \Rightarrow a < 1$$

$$a \in (-\infty, 1)$$

$$3x-1 \rightarrow 3(1)-1=2$$

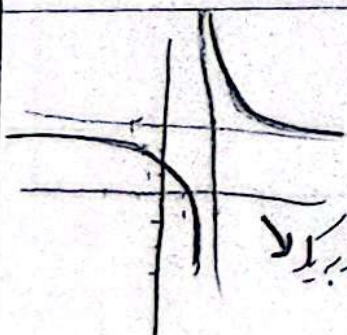
$$\begin{aligned} ax+a-1 &< 2 \\ ax+a &< 3, a > 0 \\ &\cdot < a < 3 \end{aligned}$$

$$\begin{cases} y_1 = x_1 + 2 \\ y_2 = x_2 + 2 \\ y_1 = y_2 \end{cases} \Rightarrow \begin{cases} x_1 = x_2 \\ x_1 = x_2 \end{cases}$$

$$x^2 - 4x + 2 = 0$$

$$x=1 \quad y=-1$$

$$x=2 \quad y=-1$$



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

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

$$y = \sqrt{x-3} \Rightarrow x \geq 3$$

$$y_1^2 = x_1 - 3 \quad y_2^2 = x_2 - 3$$

$$y_1^2 = y_2^2 \Rightarrow y_1 = \pm y_2 \Rightarrow x_1 - 3 = x_2 - 3$$

$$x_1 = x_2 \checkmark$$

منفی و مثبت
زیرا $0 \leq y$

$$y = x^2 + 3 \checkmark$$

$$\frac{-b}{2a} = 2 \Rightarrow x \in [2, +\infty)$$

یک به یک است

$$y = (x-2)^2 - 1$$

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

$$\sqrt{y+1} = x-2$$

$$x = \sqrt{y+1} + 2 \nearrow$$

$$y = \sqrt{x+1} + 2 \checkmark$$

$$(\sqrt{x} + \frac{1}{x})^2 = x + \sqrt{x} + \frac{1}{x}$$

$$f(x) = (\sqrt{x} + \frac{1}{x})^2 - \frac{1}{x}$$

$$f(x) + \frac{1}{x} \pm \sqrt{x} + \frac{1}{x}$$

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

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

$$y_1 = \frac{x_1^2}{x_1^2 - 2}$$

$$y_2 = \frac{x_2^2}{x_2^2 - 2}$$

$$y_1 = y_2$$

$$D_f = \mathbb{R} - (-\sqrt{2}, \sqrt{2})$$

$$\frac{x_1^2}{x_1^2 - 2} = \frac{x_2^2}{x_2^2 - 2}$$

$$(x_1, x_2) \cdot x_1^2 = (x_1, x_2) \cdot x_2^2 \Rightarrow x_1 x_1^2 = x_2 x_2^2$$

$$y = \frac{x^2}{x^2 - 2} \quad f^{-1}(x) = \frac{\sqrt{2}x}{\sqrt{x^2 - 1}}$$

$$\frac{1}{y} = 1 - \frac{2}{x^2}$$

$$\frac{2}{x^2} = 1 - \frac{1}{y}$$

$$x^2 = \frac{1}{0.5 - \frac{1}{y}}$$

$$x = \sqrt{\frac{1}{0.5 - \frac{1}{y}}}$$

$$y = \sqrt{\frac{1}{1 - \frac{1}{x^2}}} \Rightarrow D_f = \mathbb{R} - [1, 1]$$

$$x_1 = x_2 \checkmark$$

$$x_1 = x_2 \checkmark$$

$$-\frac{2}{\Delta} = \frac{x}{1+x}$$

$$-0x = -2 + 2|x|$$

$$x = -\frac{2}{3} = f(-\frac{2}{3})$$

$$\sqrt{x} - 1 = -\frac{2}{\Delta}$$

$$\Delta \sqrt{x} - \Delta = -2$$

$$\Delta \sqrt{x} = 3$$

$$x = \frac{9}{10} = g^{-1}(-\frac{2}{\Delta})$$

$$-\frac{2}{3} + \frac{9}{10} = -\frac{22}{30} \checkmark$$

$$(f^{-1}(x))^2 = x - 1$$

$$x = (f^{-1}(x))^2 + 1$$

$$f(x) = x^2 + 1$$

$$g^{-1}(12) = 2 \checkmark$$

$$g(x) = x^2 + 1 + \sqrt{x^2 + 1}$$

$$x^2 + 1 + \sqrt{x^2 + 1} = 12 \Rightarrow x = 2 \checkmark$$