

$$\frac{1}{x} + \frac{1}{(x-2)^2} = \frac{19}{9} \Rightarrow \left(\frac{1}{x} + \frac{1}{1-x}\right)^2 - \frac{1}{x(1+x)} = \frac{19}{9}$$

$$\left(\frac{1}{x(1-x)}\right)^2 - \frac{1}{x(1-x)} = \frac{19}{9}$$

$$t^2 - \frac{19}{9}t = \frac{19}{9} \Rightarrow t^2 - \frac{19}{9}t + 1 = \frac{19}{9} \Rightarrow (t-1)^2 = \left(\frac{19}{9}\right)^2 \Rightarrow t-1 = \pm \frac{19}{9}$$

$$t = \frac{19}{9} \Rightarrow x + \frac{1}{x} = \frac{19}{9} \Rightarrow 9x^2 - 19x + 9 = 0 \Rightarrow x = \frac{19 \pm \sqrt{19^2 - 4 \cdot 9 \cdot 9}}{2 \cdot 9} = \frac{19 \pm \sqrt{361 - 324}}{18} = \frac{19 \pm 7}{18}$$

$$\begin{array}{c|c|c} -x & 1 & \\ \hline -x-2 & -x+1 & x+2+x-1 \\ \hline \downarrow & \downarrow & \downarrow \\ -x-1 & x & 2x+1 \end{array}$$

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

$$\textcircled{1} -x+1 = 9 \Rightarrow x = -8 \quad (-8, 9) \times$$

$$\textcircled{2} -x+1 = 9x+2 \Rightarrow 10x = -8 \Rightarrow x = -\frac{4}{5} \Rightarrow (-\frac{4}{5}, 9) \checkmark$$

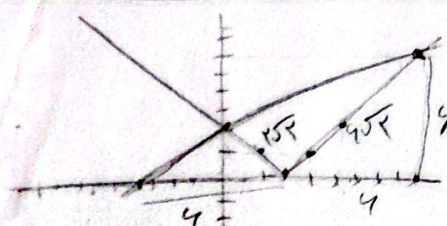
$$AB = \sqrt{16 + 9} = 5 \Rightarrow \textcircled{3} -x+1 = -9x-2 \Rightarrow 8x = -3 \Rightarrow x = -\frac{3}{8} \Rightarrow (-\frac{3}{8}, 9) \checkmark$$

$$y = \sqrt{(x-2)^2} = y = |x-2| \Rightarrow x \geq 2$$

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

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

$$\frac{1}{x}x+2 = -x+2 \Rightarrow x = 0 \Rightarrow y = 2$$



$$S = \frac{2\sqrt{2} \times 4\sqrt{2}}{2} = 8$$

$$\frac{1}{x} + \frac{1}{x+9} = \frac{1}{10}$$

$$\frac{x+9+x}{x^2+9x} = \frac{1}{10}$$

$$10x + 90 = x^2 + 9x \Rightarrow x^2 - x - 90 = 0 \Rightarrow (x+9)(x-10) = 0$$

$$\frac{x}{y} = \frac{5}{4} \Rightarrow \frac{x'}{y'} = \frac{2+\sqrt{5}}{4}$$

$$S = 1 + 1\sqrt{5}$$

$$\frac{S_{\text{پایین}}}{S_{\text{اول}} = 20} = \frac{1+1\sqrt{5}}{20} = \frac{0.4(1+\sqrt{5})}{20}$$

$$S = 20$$

$$\frac{\sqrt{x^2 + y^2}}{x} = \frac{1+\sqrt{5}}{2}$$

$$\frac{x^2}{y^2} = ?$$

$$\sqrt{x^2 + y^2} = x + \sqrt{5}x$$

$$\begin{aligned} \epsilon x^2 + \epsilon y^2 &= x^2 + 5x^2 + 2\sqrt{5}x^2 \Rightarrow \epsilon y^2 = 6x^2 + 2\sqrt{5}x^2 \\ \epsilon y^2 &= x^2(2+\sqrt{5}) \Rightarrow \frac{x^2}{y^2} = \frac{2}{2+\sqrt{5}} \end{aligned}$$

$$2a + \sqrt{2a^2 + \epsilon a} = 2 \quad \frac{a+1}{a} = ?$$

$$\sqrt{2a^2 + \epsilon a} = 2 - 2a$$

$$2a^2 + \epsilon a = \epsilon + 9a^2 - 4a \Rightarrow 7a^2 - 14a + \epsilon = 0$$

$$\frac{2+V}{V} = \frac{9}{V} = \frac{9}{2} \quad \left| \frac{2+1}{2} = \frac{3}{2} \right| \quad \frac{a^2 - 14a + 18}{(2a-1)(2a-2)} \Rightarrow a = \frac{2}{V}$$

$$\frac{2\sqrt{n+1} - \sqrt{(n-1)(n+1)} - \sqrt{(n-1)(n+1)} - 2\sqrt{n+1}}{1-n} = \sqrt{n-1} \quad \left\{ \begin{array}{l} \sqrt{n-1} > 0 \Rightarrow n-1 > 0 \Rightarrow n > 1 \\ \sqrt{n-1} = 2 \Rightarrow n \neq 10 \end{array} \right. \quad (2)$$

$$-2\sqrt{n-1} = 1\sqrt{n-1} - n\sqrt{n-1}$$

$$-2\sqrt{n+1}\sqrt{n-1} = \sqrt{n-1}(1-n) \Rightarrow -2\sqrt{n+1} = 1-n \quad \begin{aligned} &\epsilon = \frac{-b}{2a} = \frac{-2}{2} = -1 \\ &\epsilon n + 1 = 4\epsilon - n^2 \end{aligned} \quad (7)(2) \Rightarrow \text{نتیجه}$$

$$\sqrt{2-n} > 0 \Rightarrow 2-n > 0 \Rightarrow \boxed{2 > n}$$

$$\sqrt{2-n} \neq 2 \Rightarrow 2-n \neq 4 \Rightarrow \boxed{x \neq -2}$$

$$\sqrt{2-n} = t$$

$$\frac{x - \sqrt{2-n} - \sqrt{2-n}}{2+n} = \frac{-2\sqrt{2-n}}{2+n} = \frac{2-n}{2+n} \Rightarrow \epsilon - 2n^2 = -20 + n$$

$$(2-n)(2+n) = (2-n)(-10)$$

$$2+n = -10 \Rightarrow \text{نتیجه}$$