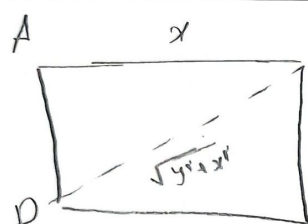


$$S_1 = \text{عرض} \times \text{طول} = 5 \times 4 = 20$$

$$\frac{x}{4} = \frac{1+\sqrt{5}}{2} \Rightarrow 2x = 4 + 4\sqrt{5} \Rightarrow x = 2 + 2\sqrt{5}$$

$$S_2 = 4 \times (2 + 2\sqrt{5}) = 8 + 8\sqrt{5} \Rightarrow \frac{8(1+\sqrt{5})}{2} = 4(1+\sqrt{5})$$



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

$$x^2 + 2 \cdot x^2 + 8\sqrt{5}x^2 = x^2 + 4y^2 \Rightarrow \frac{x^2}{y^2} = \frac{4}{2+8\sqrt{5}}$$

$$\frac{4(2-8\sqrt{5})}{4-320} = \frac{1-32\sqrt{5}}{80} = \frac{1-4\sqrt{5}}{10} = 2-2\sqrt{5}$$

$$\left. \begin{array}{l} 2a^2 + 4a + 10 \\ \sqrt{2a^2 + 4a} = 2 - 4a \Rightarrow 2a^2 + 4a = 4 - 8a + 16a^2 - 16a \end{array} \right\}$$

$$2a^2 - 12a + 4 = 0 \xrightarrow{\div 2} a^2 - 6a + 2 = 0 \Rightarrow (a-14)(a-2)$$

$$a = \frac{14}{2} = 7 \text{ و } \frac{2}{2} = 1 \quad \left| \quad 2 - 4a \geq 0 \Rightarrow \frac{14}{2} \text{ و } \frac{2}{2} \Rightarrow \frac{9}{2} = 4.5 \right.$$

$$\frac{\sqrt{x+1}}{\sqrt{x-1}+3} - \frac{\sqrt{x+1}}{3-\sqrt{x-1}} = \frac{x-1}{\sqrt{x-1}} \Rightarrow \frac{(\sqrt{x+1})(3-\sqrt{x-1}) - (\sqrt{x+1})(3+\sqrt{x-1})}{1-x} = \frac{x-1}{\sqrt{x-1}}$$

$$\frac{(\sqrt{x+1})(3-\sqrt{x-1}-3-\sqrt{x-1})}{1-x} = \frac{x-1}{\sqrt{x-1}} \Rightarrow \frac{(\sqrt{x+1})(-2\sqrt{x-1})}{1-x} = \frac{x-1}{\sqrt{x-1}}$$

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

$$\xrightarrow{\text{ضرب در مخرج}} -1 \cdot (2-x) = 2-x^2 \Rightarrow -2 + 10x = 2 - x^2 \Rightarrow x^2 + 10x - 4 = 0$$

$$x = -12 \rightarrow \text{حل نشده}$$

$$x \neq -2$$

یک بخش زیاد از حساب امارات و اینها نوشتم ↓ جمع = ۲

$$\frac{1}{x^2} + \frac{1}{(1-x)^2} = \frac{16}{9} \Rightarrow \frac{1}{x^2} + \frac{1}{1+x^2-2x} = \frac{16}{9} \Rightarrow \frac{1+x^2-2x+x^2}{(x(1-x))^2} = \frac{16}{9}$$

$$\frac{(x^2-2x)+1}{x^2} = \frac{16}{9} \Rightarrow 9-18x=16x^2 \Rightarrow 9-18x=16x^2 \Rightarrow 16x^2+18x-9=0$$

$$x = \frac{1}{4}, \frac{3}{4}, \frac{5+\sqrt{55}}{10}, \frac{5-\sqrt{55}}{10}$$

$$\sqrt{x + \sqrt{-x^3 + 4x^2 + 25x - 100}} + \sqrt{x^2 + \sqrt{-x^3 + 4x^2 - 1}} = x + 2$$

$$-x^2(x-4) + 25(x-4) \quad \quad \quad -\frac{1}{x} + \frac{1}{x} - \frac{2}{x} = \frac{2, 4, 4, 2}{x}$$

$$(x-4)(25-x^2) \cdot \frac{-5}{+9-6+9} \dots \quad \quad \quad (-5, 5] \cup [4, 5] \Rightarrow I \cap II \cap III = \{4\}$$

$$3y = -x + 17 \Rightarrow y = -\frac{x}{3} + \frac{17}{3}$$

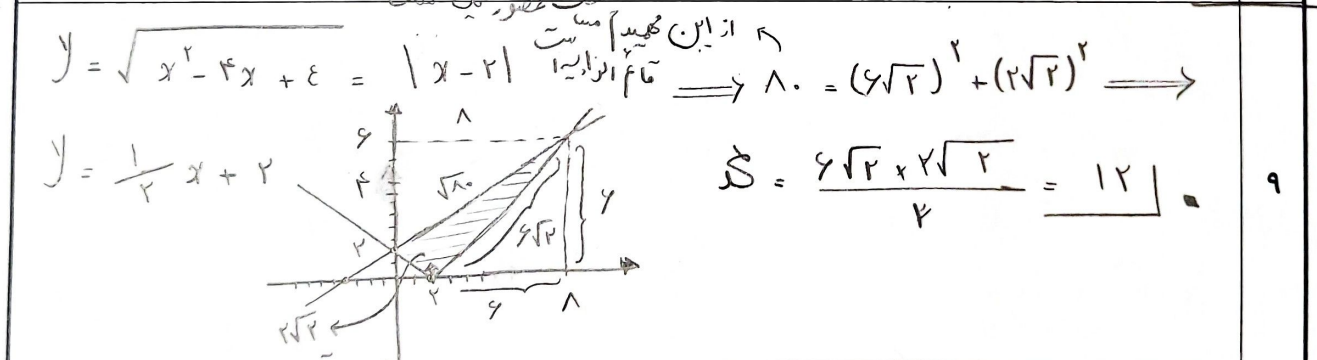
$$y = |x+2| + |x-1| \Rightarrow$$

$$I: \begin{array}{c|c|c} -2 & 1 & \\ \hline (-2x-1) & 3 & (2x+1) \end{array}$$

$$II: \begin{array}{c|c|c} 2 & 1 & \\ \hline -2x+1 & 3 & 2x+1 \end{array}$$

$$III: \begin{array}{c|c|c} 1 & 2 & \\ \hline -2x+1 & 3 & 2x+1 \end{array}$$

$$AB = \sqrt{(2+4)^2 + (7-5)^2} = \sqrt{40}$$



$$\frac{1}{y-9} + \frac{1}{y} = \frac{1}{2}$$

$$\frac{y+y-9}{y^2-9y} = \frac{1}{2} \Rightarrow 2y-18=y^2-9y \Rightarrow y^2-11y+18=0 \Rightarrow (y-6)(y-3)$$

$$y = \begin{cases} 6 \\ 3 \end{cases} \Rightarrow \text{ماربجوز} \rightarrow 36h \rightarrow \text{عند} \rightarrow 6$$