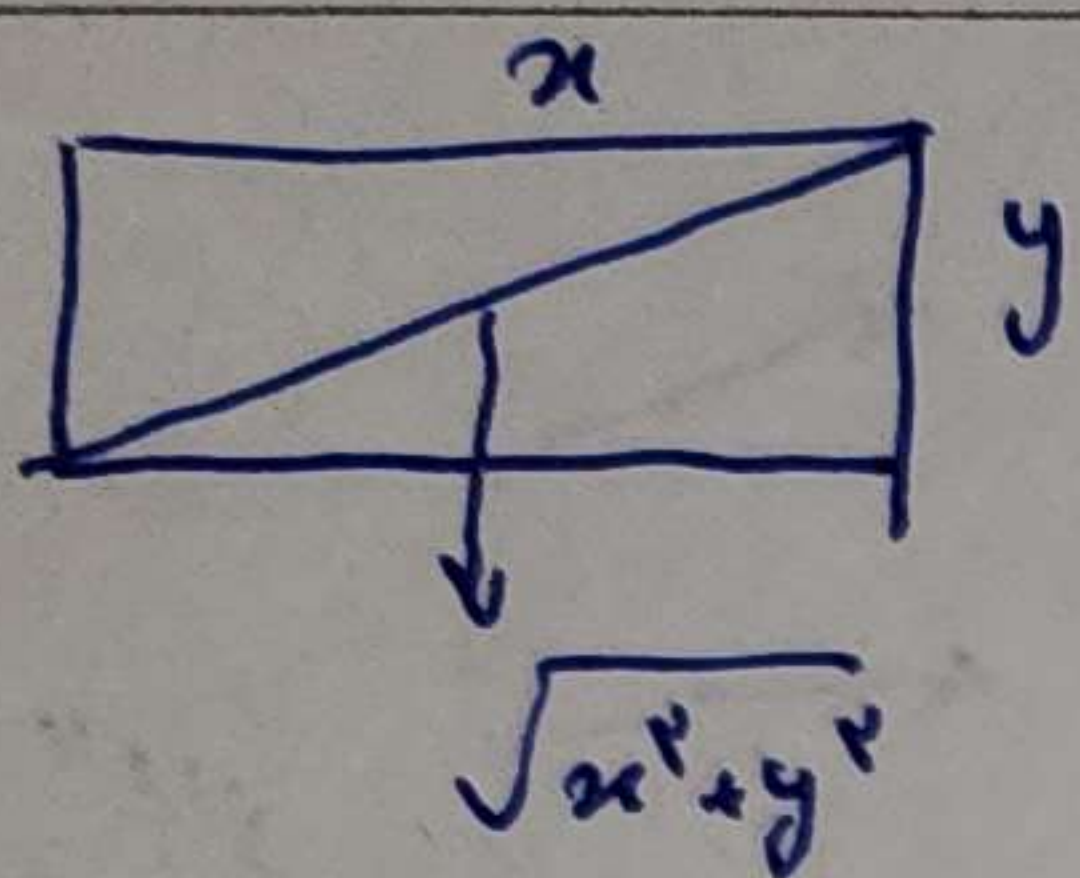
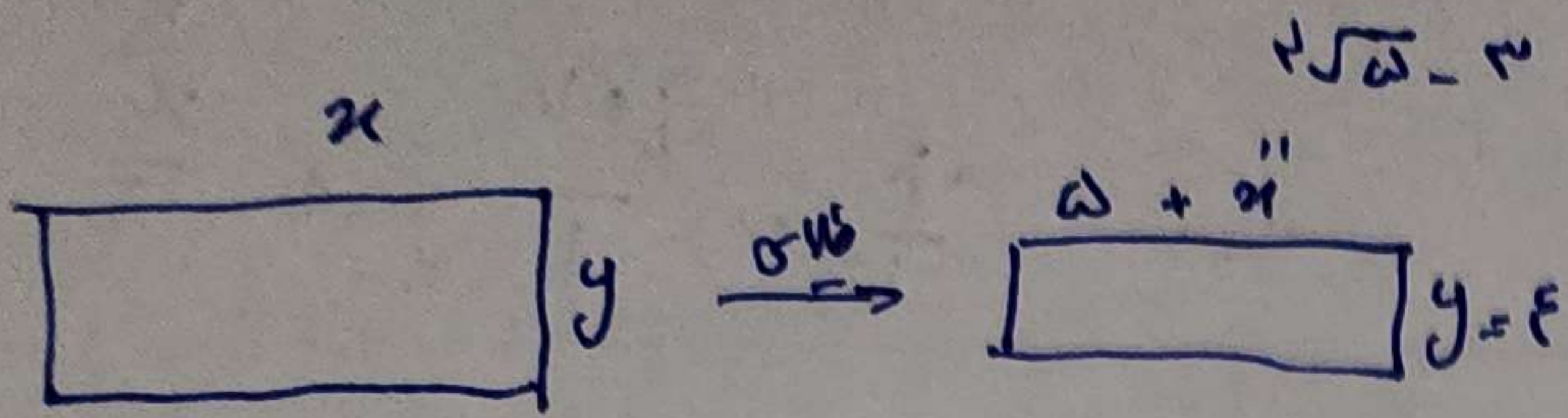


۱۸، ۷۵

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

$$\frac{(\omega+2\sqrt{5}-3) \times 4}{4 \times 5} = \frac{1+1\sqrt{5}}{2} \checkmark$$

$$10+2x = 4+4\sqrt{5} \Rightarrow 2x = 4\sqrt{5}-6 \Rightarrow x = 2\sqrt{5}-3$$



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

$$\xrightarrow{2\omega} 4x^2+4y^2 = x^2 + 5x^2 + 4\sqrt{5}x^2$$

$$4y^2 = x^2(2+2\sqrt{5})$$

$$\left(\frac{x}{y}\right)^2 = \frac{2}{1+\sqrt{5}} \checkmark$$

$$2-3a = \sqrt{4a^2+4a} \rightarrow 4+9a^2-12a = 4a^2+4a \Rightarrow 5a^2-16a+4=0$$

$$a^2-16a+4$$

$$(a-2)(a-14)$$

$$a = \frac{2}{5} \quad \frac{14}{5} \quad (a < \frac{2}{5})$$

$$\frac{a+1}{a} = \frac{\frac{2}{5}+1}{\frac{2}{5}} = \frac{7}{2} \checkmark$$

$$D_f = x > 1 \quad \left. \begin{array}{l} t = \sqrt{x-1} \\ \sqrt{x+1} = \sqrt{t^2+2} \end{array} \right\} \Rightarrow \frac{\sqrt{t^2+2}}{t+2} - \frac{\sqrt{t^2+2}}{2-t} = t$$

$$x = t^2+1 = 12+4\sqrt{3}$$

$$\sqrt{t^2+2} \left(\frac{1}{t+2} - \frac{1}{2-t} \right) = t \Rightarrow \frac{-2t\sqrt{t^2+2}}{4-t^2} = t \Rightarrow \frac{-2\sqrt{t^2+2}}{4-t^2} = 1 \rightarrow$$

اشباه حل کردم مگر نه؟
نه درسته نه؟

$$4+t^2+1 = t^4-18t^2+11 \rightarrow t^4-19t^2+10=0$$

$$t^2=y \quad y^2-19y+10=0 \Rightarrow y = 11 \pm 4\sqrt{3}$$

$$11+4\sqrt{3} \quad 11-4\sqrt{3}$$

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

$$\frac{-2}{(4-t^2)} = \frac{1}{\omega} \Rightarrow -10 = 4-t^2 \quad t^2=14$$

$$t^2=14 \Rightarrow t = \sqrt{14}$$

$$2-x=14$$

$$-x=12 \Rightarrow x=-12 \checkmark$$

مارش + معضای نه نه نه!

$$D_f = \{x \neq 0, \pm 1\}$$

$$\frac{(1-x)^4 + x^4}{(1-x)^4 x^4} = \frac{19}{9}$$

$$\frac{x^4 - 4x^3 + 6x^2 - 4x + 1}{x^4 - 4x^3 + 6x^2} = \frac{19}{9} \Rightarrow 19x^4 - 4x^3 + 19x^2 - 4x + 1 = 0$$

$$19x^4 - 4x^3 + 19x^2 - 4x + 1 = 0$$

$$(9x^2 - 4)(9x^2 - 4)(10x^2 - 10x - 3) = 0$$

$$10x^2 - 10x - 3 = 0$$

$$x = \frac{m}{n} > \frac{1}{9}$$

$$\Delta = 100 + 120 = 220$$

$$\frac{10 \pm \sqrt{220}}{20} = \frac{5 \pm \sqrt{55}}{10}$$

$$\frac{m}{n} + \frac{1}{n} + \frac{5 - \sqrt{55} + 5 + \sqrt{55}}{10} = 2$$

$$\sqrt{-x^2 + 4x - 1} \geq 0 \Rightarrow -x^2 + 4x - 1 \geq 0$$

$$1 < x \leq 5$$

$$\sqrt{-x^2 + 4x + 4\omega x - 1} = \sqrt{-(x-5)(x-\omega)(x+\omega)} \geq 0$$

$$\wedge \Rightarrow x = 5$$

$$\text{if } x = 5 \Rightarrow \sqrt{19 + \sqrt{-19 + 20 - 1}} = 4$$

$$x = 5$$

$$xy + x = 19 \Rightarrow y = \frac{-x + 19}{x}$$

$$\begin{cases} x \geq 1 \\ -1 < x < 1 \\ x \leq -1 \end{cases}$$

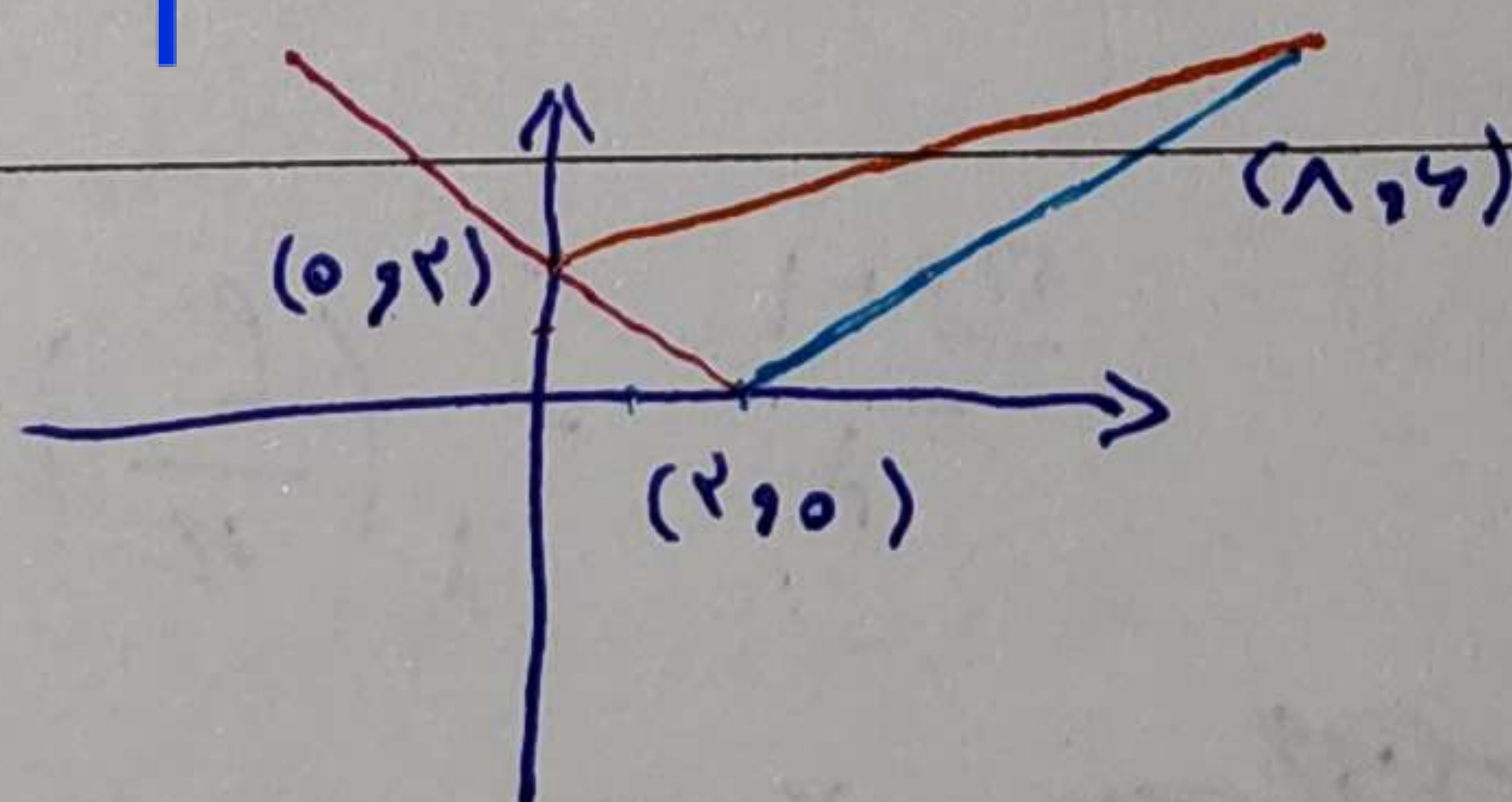
$$\begin{matrix} 19x+1 \\ x \\ -19x-1 \end{matrix}$$

$$x = -1$$

$$x = 1$$

$$x = 2$$

$$AB = \sqrt{4^2 + 2^2} = 2\sqrt{5}$$



$$\sqrt{(x-2)^2} = |x-2| = \begin{cases} x-2 & x \geq 2 \\ 2-x & x < 2 \end{cases}$$

$$\begin{aligned} x-2 &= 2-x \Rightarrow x=2, y=0 \\ x-2 &= \frac{1}{2}x+2 \Rightarrow x=1, y=4 \\ 2-x &= \frac{1}{2}x+2 \Rightarrow x=0, y=2 \end{aligned}$$

$$S = \frac{1}{2} \begin{vmatrix} 1 & 4 & 1 \\ 2 & 0 & 1 \\ 0 & 2 & 1 \end{vmatrix} = \frac{1}{2} \times 2 = 1$$

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

$$2x + 18 + 2x = x^2 + 9x$$

$$x^2 - 4x - 18 = 0$$

$$(x-14)(x+9)$$

$$14$$

$$-9$$