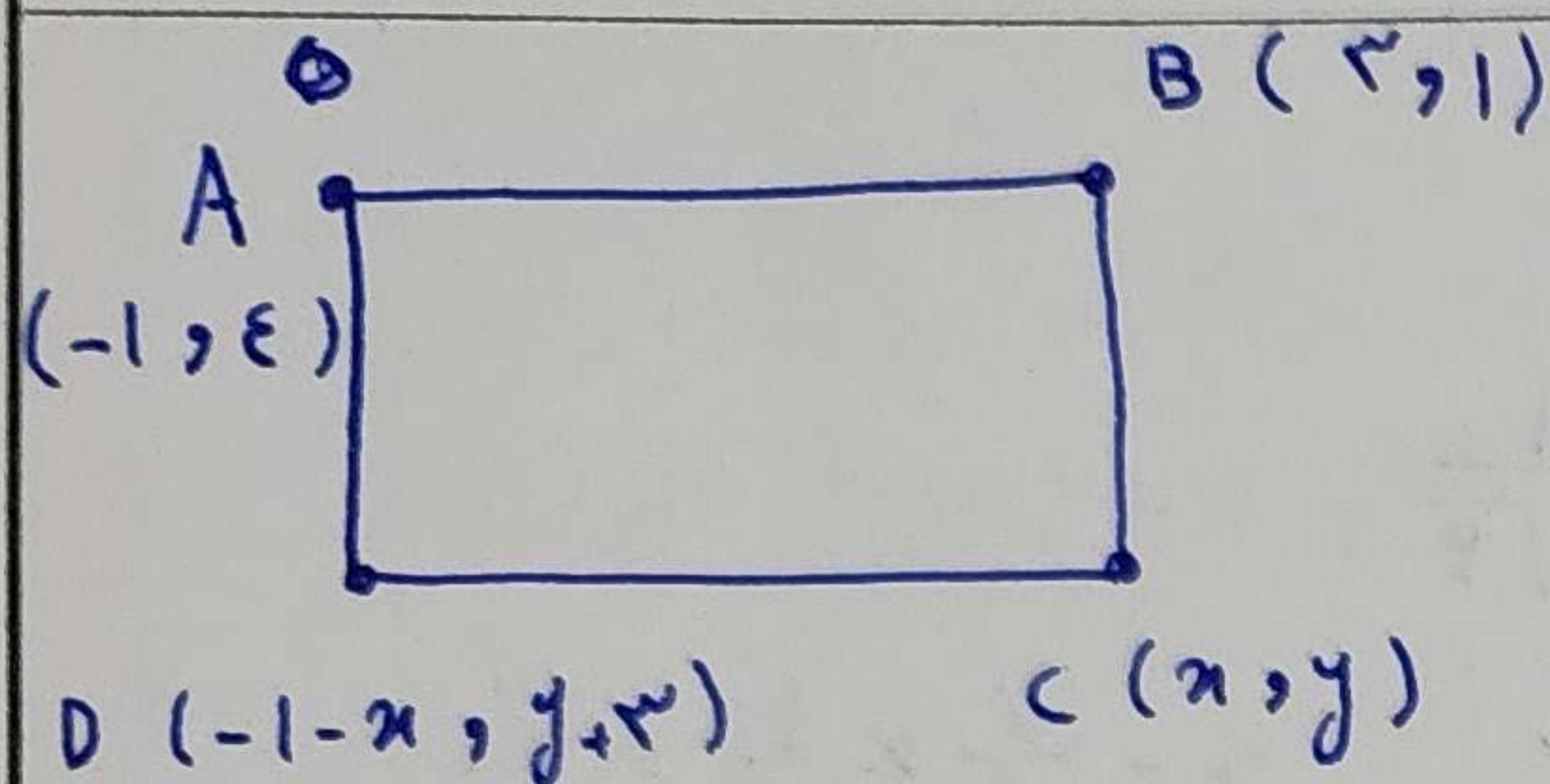


$$m = \frac{m-k}{4} = -\frac{1}{4} \Rightarrow -4 = 2m - 2k \rightarrow m - k = -2$$

$$AB = \sqrt{(4)^2 + (m-k)^2} = \sqrt{16+4} \Rightarrow s = (\sqrt{45})^2 = (3\sqrt{5})^2 = 45$$

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$$AB = \sqrt{16+9} = 5$$

$$CD = 5 = \sqrt{(2x+1)^2 + 9} = \sqrt{4x^2 + 4x + 10} = \sqrt{45}$$

$$4x^2 + 4x - 10 = 0 \rightarrow x^2 + x - 2.5 = 0$$

$$(x-1)(x+2.5) = 0$$

$$2x \cdot \frac{5}{4} + 2x \cdot 5 = 10$$

میتوانست

$$\sqrt{(x-3)^2 + (y-1)^2} = \sqrt{x^2 + (y-1)^2} \rightarrow x = \frac{3}{y}$$

$$\sqrt{(\frac{3}{y})^2 + (y-4)^2} = \sqrt{(\frac{11}{y})^2 + (-y-2)^2} \Rightarrow -12 = 12y \Rightarrow y = -1$$

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$$m = \sqrt{3} = \tan 60^\circ$$

$$\frac{-2m}{m^2-1} = \sqrt{3} \rightarrow \sqrt{3} m^2 + 2m - \sqrt{3} = m^2 + 2m - 3$$

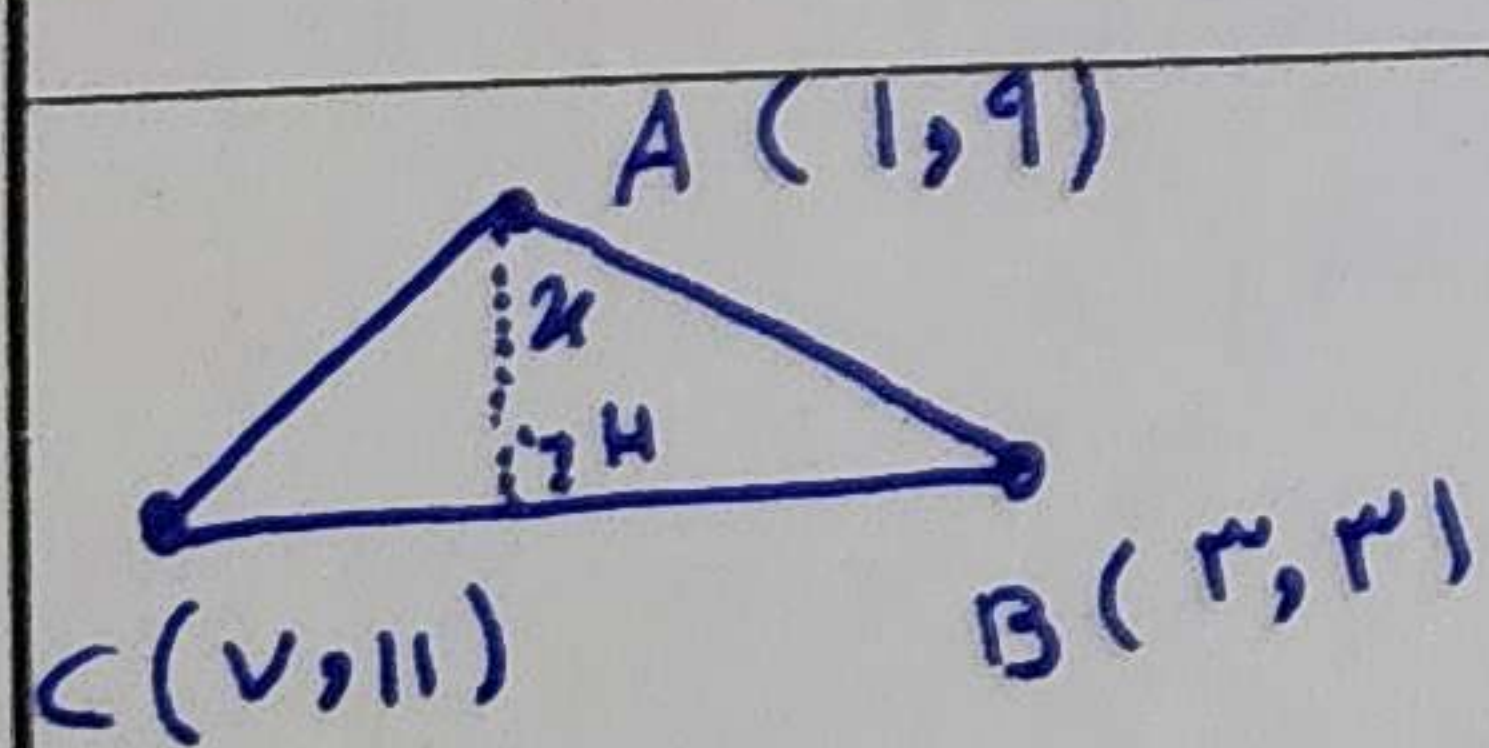
$$(m+3)(m-1)$$

$$m = \frac{-3}{\sqrt{3}} = -\sqrt{3}$$

$$m = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

$$\frac{1}{\sqrt{3}} - \frac{(-3)}{\sqrt{3}} = \frac{4}{\sqrt{3}}$$

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$$m_{BC} = \frac{11-3}{5-3} = 2 \rightarrow m_{AH} = -\frac{1}{2}$$

$$y_{BC} = 2x + h \rightarrow 3 = 4 + h \rightarrow h = -1$$

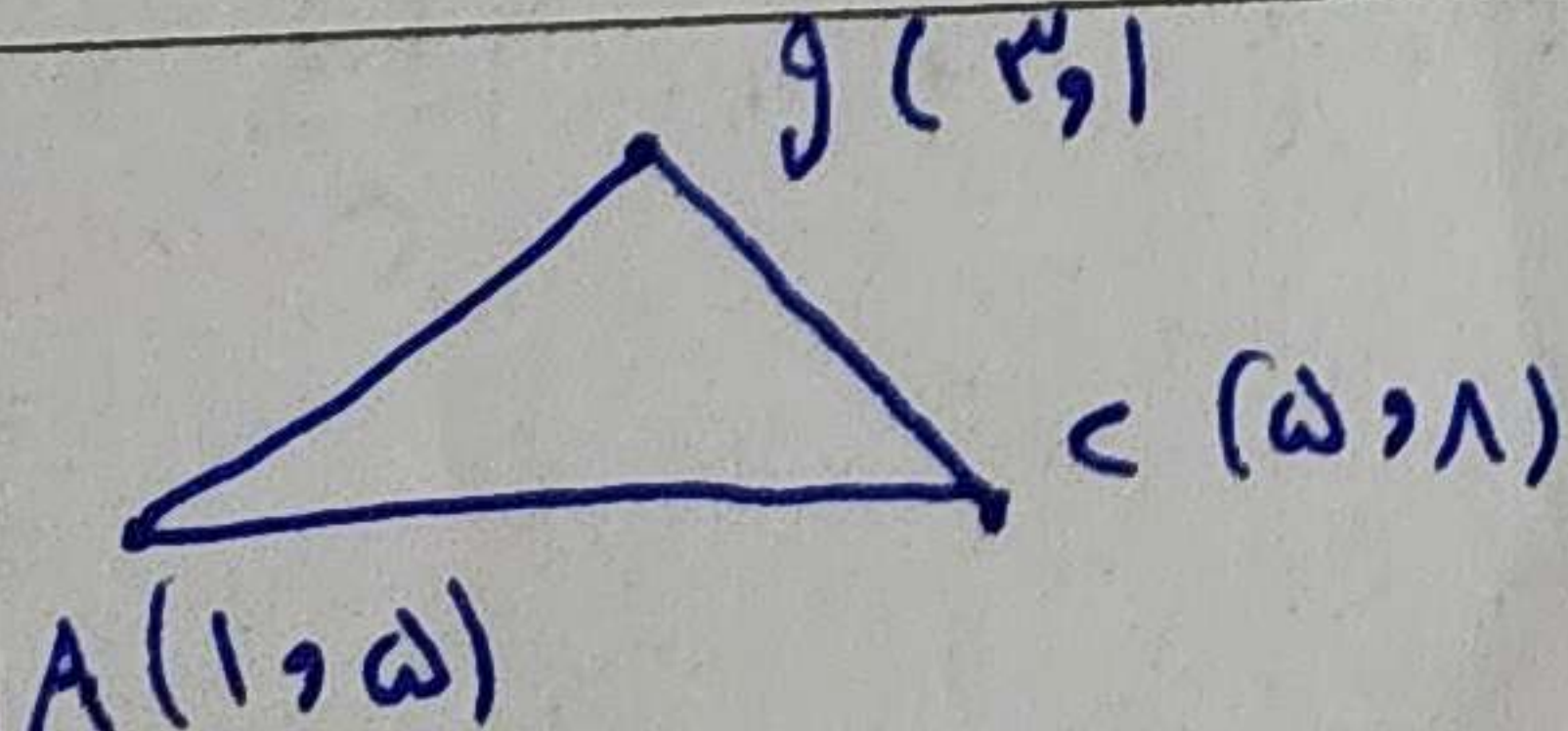
$$\rightarrow y = 2x - 3$$

$$y_{AH} = -\frac{1}{2}x + h \rightarrow 9 = -\frac{1}{2}x + h \Rightarrow h = \frac{19}{2} \rightarrow y = -\frac{1}{2}x + \frac{19}{2}$$

$$2x - 3 = -\frac{1}{2}x + \frac{19}{2} \rightarrow \frac{5}{2}x = \frac{25}{2} \rightarrow x = 5, y = 7$$

$$AH = \sqrt{(5-1)^2 + (7-9)^2} = \sqrt{20} = 2\sqrt{5}$$

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$$A = \frac{3x+17}{4} = 5-2x \rightarrow 31-12x = 3x+17 \rightarrow 14 = 15x \rightarrow x = \frac{14}{15}, y = 5$$

$$C \rightarrow \frac{5x-19}{4} = \frac{3x+17}{4} \rightarrow 15x-31 = 3x+17 \Rightarrow 12x = 48 \Rightarrow x = 4, y = 1$$

$$B \rightarrow 5-2x = \frac{5x-19}{4} \Rightarrow 20-8x = 5x-19 \Rightarrow 39 = 13x \Rightarrow x = 3, y = 1$$

$$y_{AC} = \frac{5}{4}x + h \rightarrow 5 = \frac{5}{4}x + h \rightarrow h = \frac{5}{4}$$

$$y_{BH} = -\frac{4}{3}x + h \rightarrow 1 = -\frac{4}{3}x + h \rightarrow h = \frac{7}{3}$$

$$BH = \sqrt{(3-\frac{5}{4})^2 + (\frac{7}{3}-1)^2} = \sqrt{\frac{900}{64}} = \frac{15}{4}$$

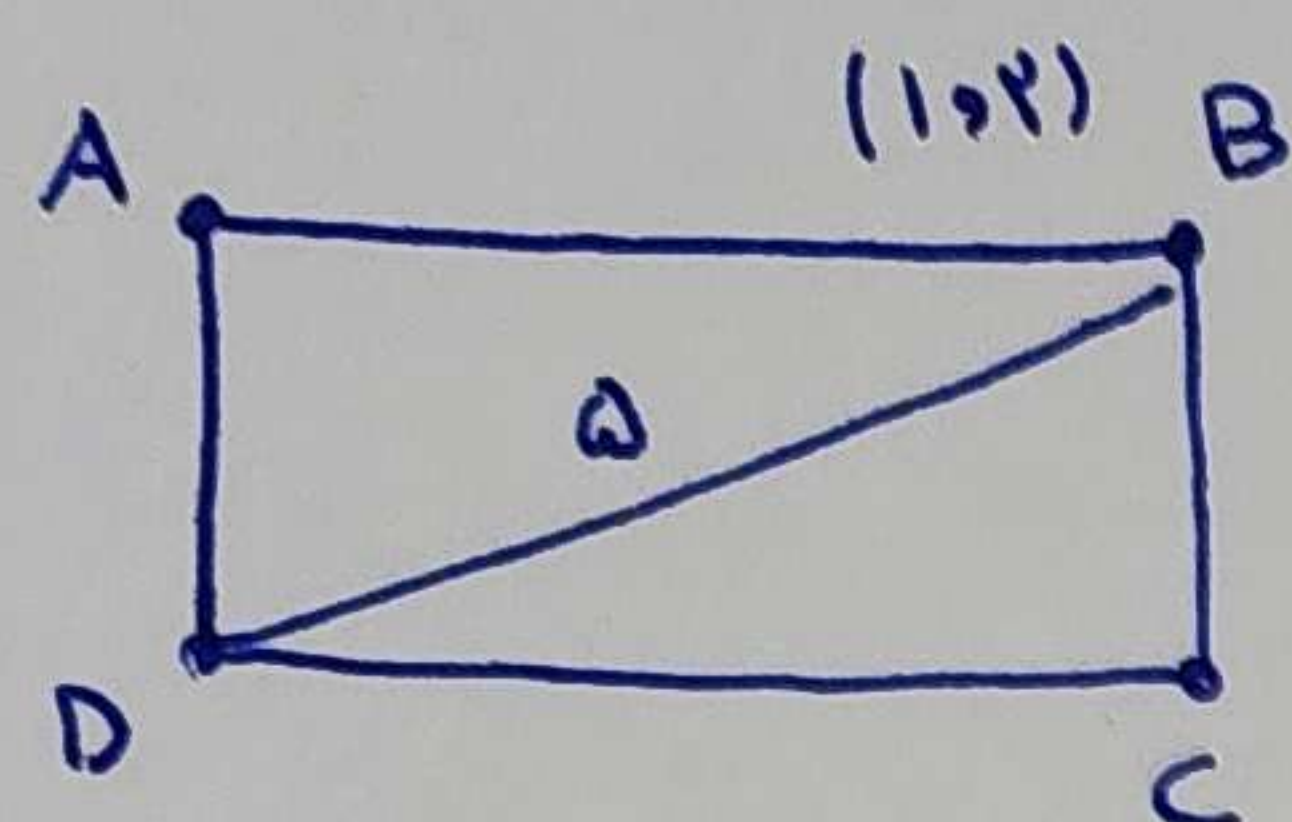
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$$y = mx + h \rightarrow m = \frac{-\frac{4}{\sqrt{2}}}{\frac{4}{\sqrt{2}}} = -1 \Rightarrow y = -1x - 4 \quad (x, x) \rightarrow x = -1x - 4$$

$$4x = -4 \quad x = \frac{-4}{4} = \frac{-1}{\sqrt{2}}$$

$$d = \frac{4}{\sqrt{2}} \sqrt{2}$$

6



$$y - ax = 1 \Rightarrow y = x + 1 \quad m_{AB} = m_{DC} \Rightarrow \frac{a}{1} = \frac{1}{a} \Rightarrow a^2 = 1$$

$$ay - x = a - 1 \Rightarrow y = x \quad a = \pm 1 \rightarrow a = +1$$

~~$$y = ax + 1 \rightarrow y = x + 1$$~~

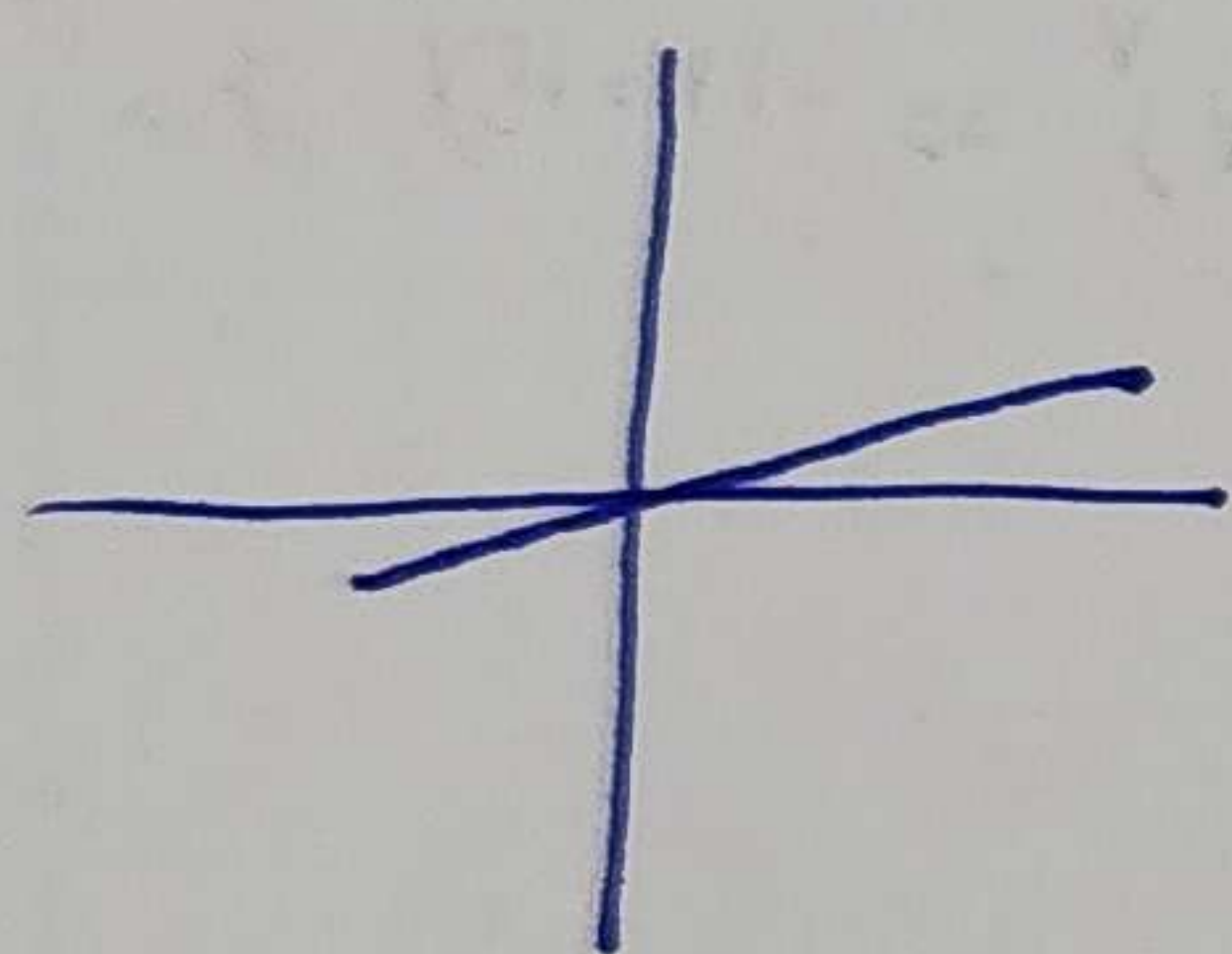
~~$$y = \frac{1}{a}x + a - 1 \rightarrow y = x$$~~

~~$$a = \pm 1 \rightarrow a = +1$$~~

$$a = 1 \begin{cases} y = x \\ y = x + 1 \end{cases} \quad \frac{|1 - 0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}}$$

$$a^2 = 2\omega - \frac{1}{\sqrt{2}} \quad a = \frac{\sqrt{2}}{\sqrt{2}} \Rightarrow S = \frac{\sqrt{2}}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2}}$$

7

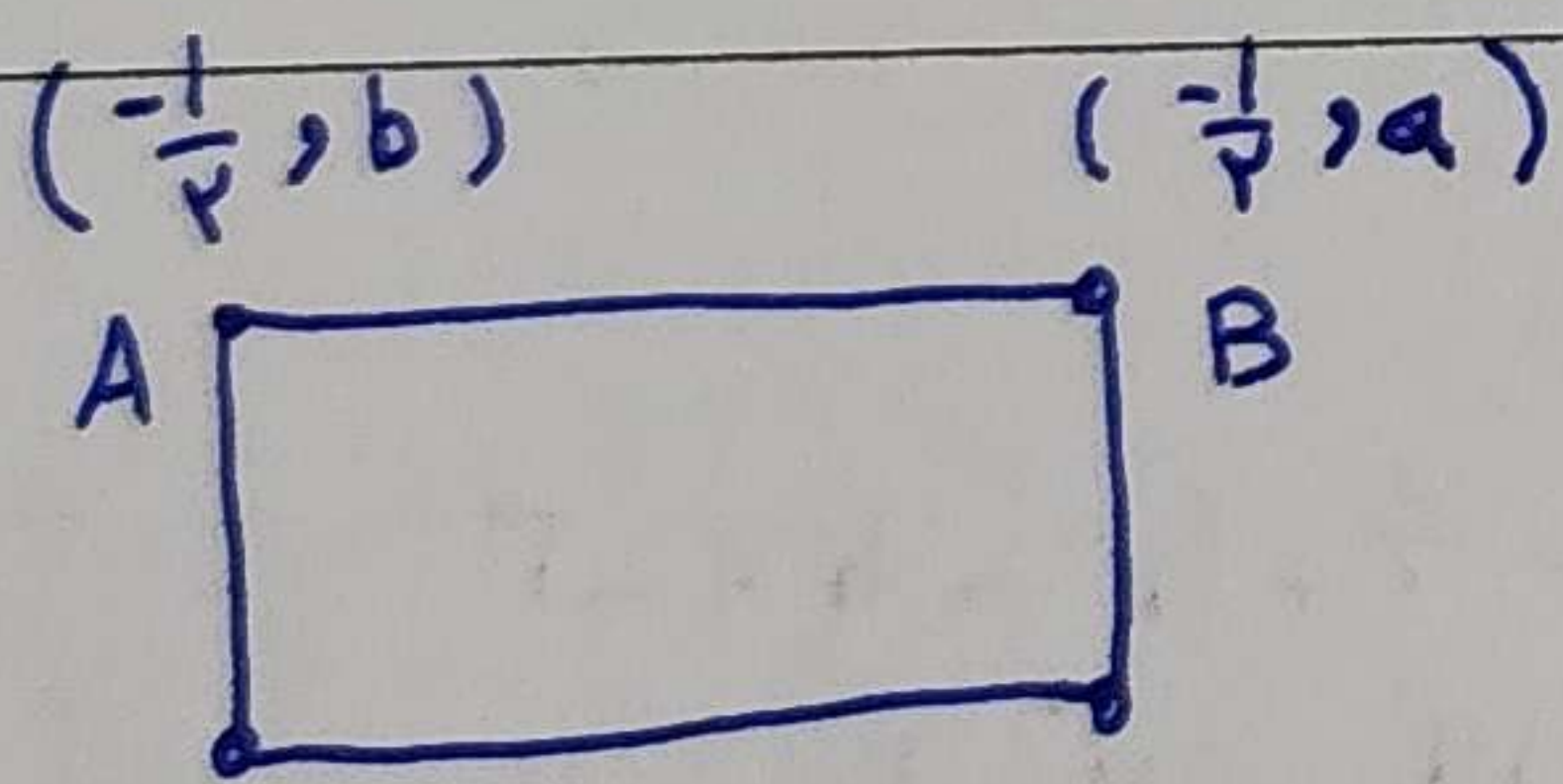


$$\frac{|1 - 0 - 1|}{\sqrt{1+9}} = \frac{0}{\sqrt{10}} \quad \begin{cases} x - 3y = 1 \\ y = -3x + 11 \end{cases}$$

$$10x = 3 \quad x = 3/10 \quad y = 0/9 \quad a^2 = 14 - \frac{9}{10}$$

$$a = \sqrt{\frac{1\omega}{10}} \quad S = \frac{1}{\sqrt{2}} \times \frac{3}{\sqrt{10}} \times \sqrt{\frac{1\omega}{10}} = \frac{3\sqrt{1\omega}}{20}$$

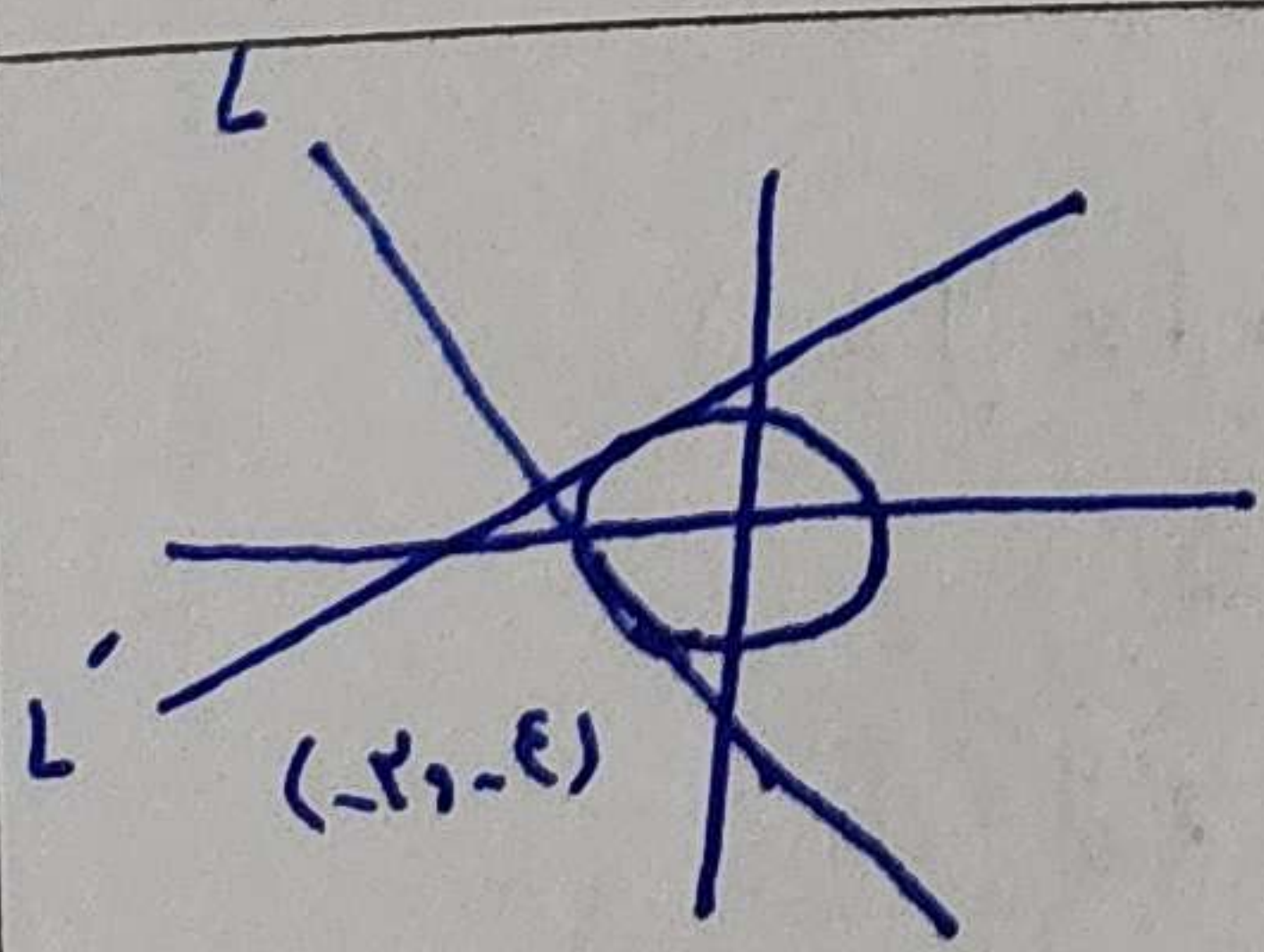
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$$m = \frac{b - a}{\frac{1}{4}} = \sqrt{3} \rightarrow b - a = \frac{\sqrt{3}}{4}$$

$$AB\sqrt{2} \rightarrow \sqrt{\left(\frac{1}{4}\right)^2 + \left(\frac{\sqrt{3}}{4}\right)^2} = \sqrt{\frac{1}{16} + \frac{3}{16}} \times \sqrt{2} = \frac{\sqrt{2}}{4} \sqrt{2} = \frac{\sqrt{2}}{2}$$

9



$$L: y = -\frac{3}{4}x + h \rightarrow -1 = \frac{3}{4} + h \rightarrow h = -\frac{7}{4}$$

$$\rightarrow y = -\frac{3}{4}x - \frac{7}{4}$$

$$mL' = \frac{4}{3} \Rightarrow y = \frac{4}{3}x + h \rightarrow y = \frac{4}{3}x + \frac{7}{3}$$

10

$$\frac{|0 + 0 + h|}{\sqrt{\frac{16}{9}}} = \omega \rightarrow h = \frac{3\omega}{4}$$

$$\frac{4}{3}x + \frac{7}{3} = -\frac{3}{4}x - \frac{7}{4} \rightarrow \frac{7\omega x}{12} = -\frac{17\omega}{12}$$

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