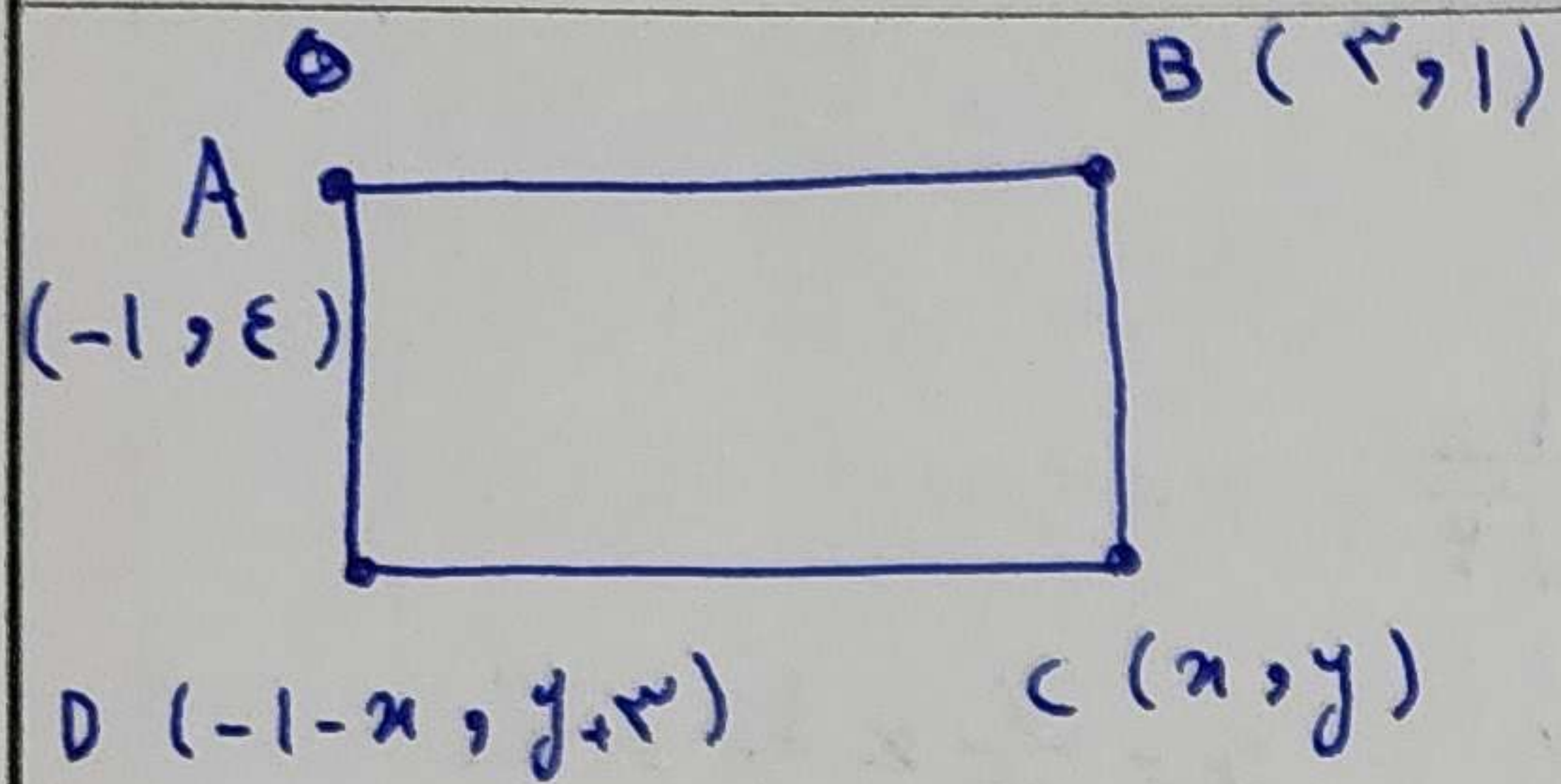


۱۷, ۵

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

$$AB = \sqrt{(4)^2 + (m-k)^2} = \sqrt{16+4} \Rightarrow s = (\sqrt{40})^2 = (2\sqrt{10})^2 = 40$$

(۲)



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

$$CD = 5 = \sqrt{(2x+1)^2 + 9} = \sqrt{4x^2 + 4x + 10} = \sqrt{40}$$

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

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

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

$$\sqrt{(x-3)^2 + (y-1)^2} = \sqrt{x^2 + (y-1)^2} \rightarrow x = \frac{y}{2} \quad \text{قطر } AC = BD \quad \sqrt{(\frac{5}{2})^2 + (y-4)^2} = \sqrt{(\frac{11}{2})^2 + (-y-2)^2} \Rightarrow -12 = 12y \quad y = -1$$

(۲)

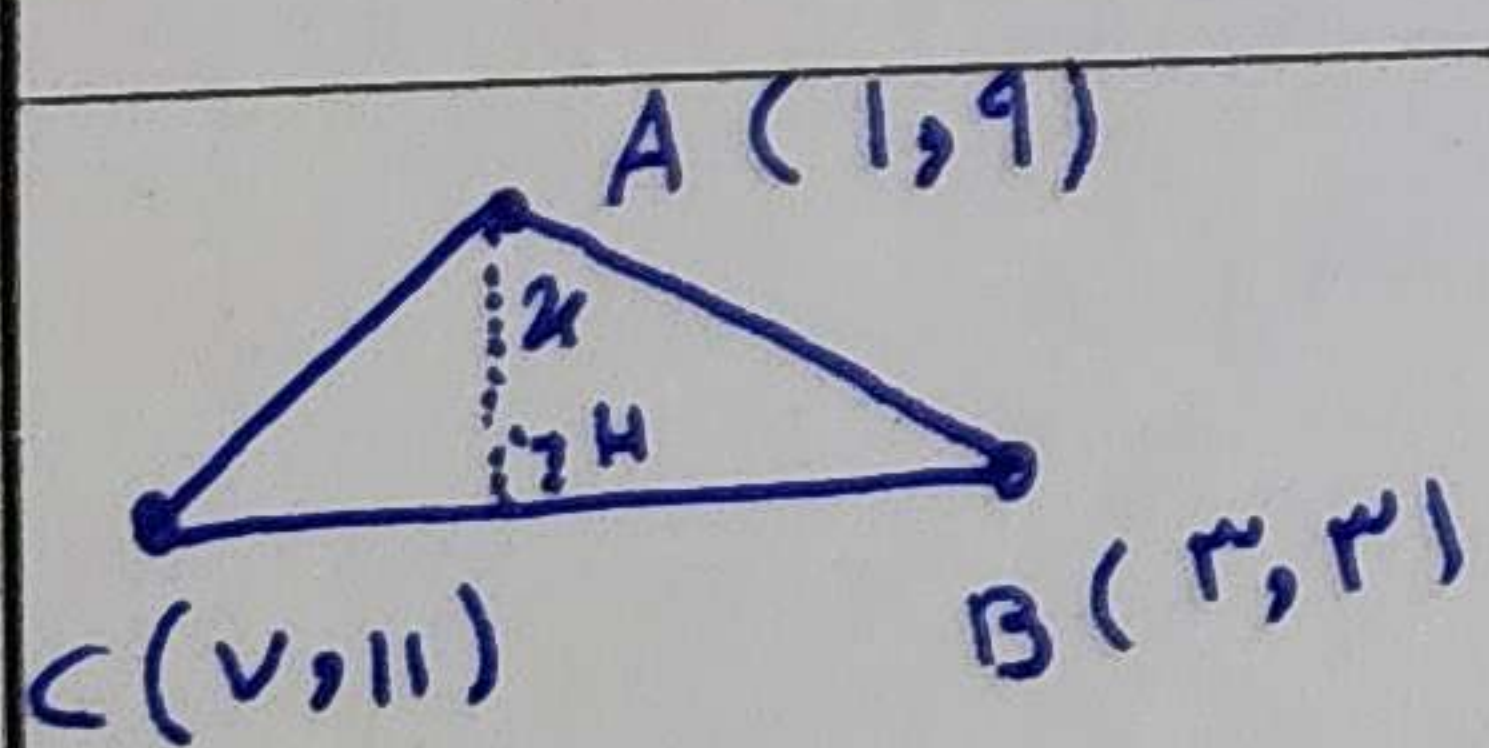
$$m = \sqrt{3} = \tan 60^\circ$$

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

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

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

(۲)



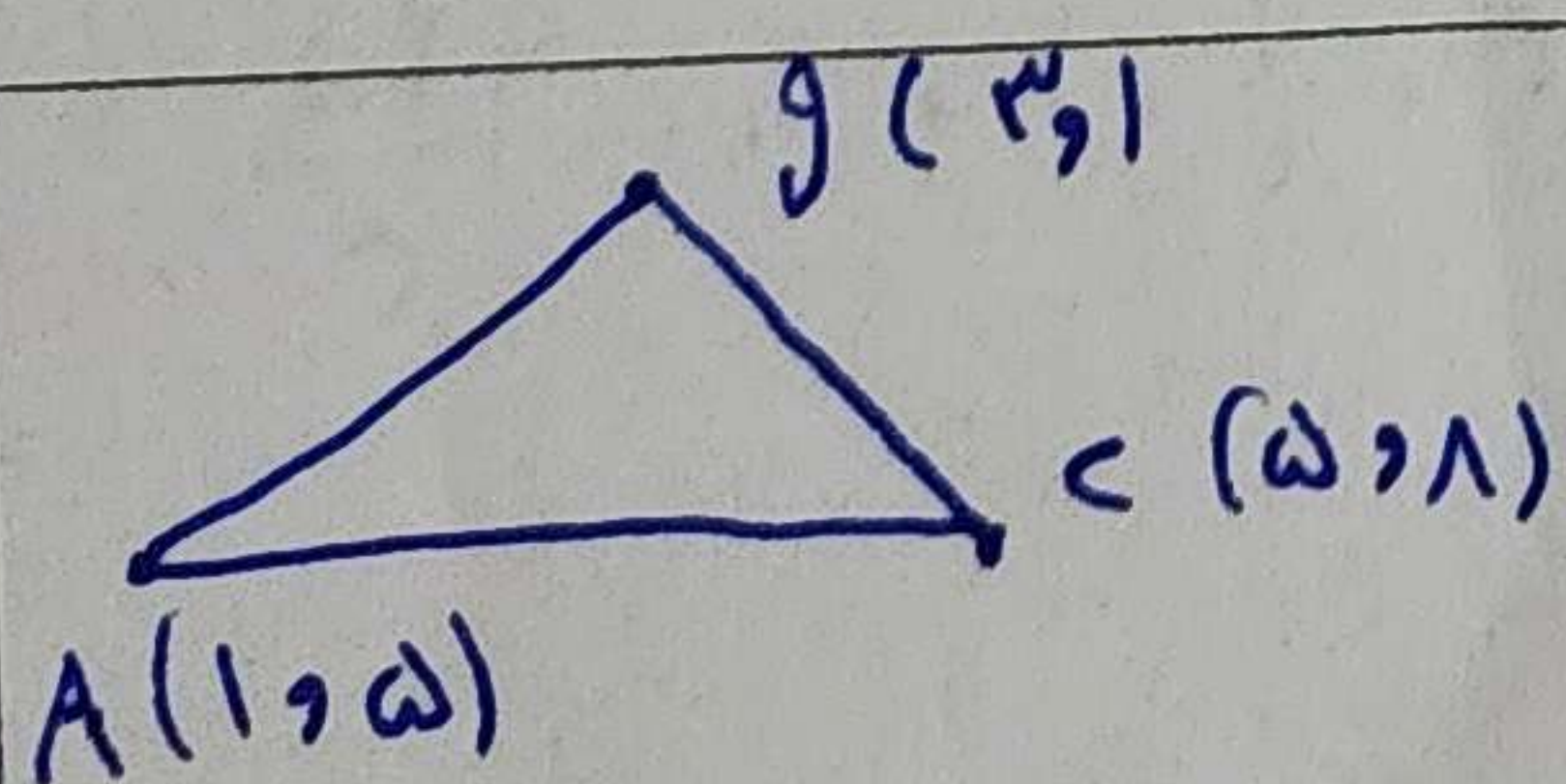
$$m_{BC} = \frac{11-3}{5-3} = 2 \rightarrow m_{AH} = -\frac{1}{2} \quad y_{BC} = 2x+h \rightarrow 3 = 4+h \rightarrow h = -1$$

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

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

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

(۲)



$$A = \frac{3x+17}{4} = 5-2x \rightarrow 21-12x = 3x+17 \rightarrow 11=11x \rightarrow x=1, y=5$$

$$C \Rightarrow \frac{5x-19}{4} = \frac{3x+17}{4} \rightarrow 15x-31 = 3x+17 \Rightarrow 11x=48 \rightarrow x=4.36, y=1$$

(۱)

$$B \Rightarrow 5-2x = \frac{5x-19}{4} \Rightarrow 15-8x = 5x-19 \Rightarrow 11x=33 \Rightarrow x=3, y=1$$

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

$$y_{BH} = -\frac{4}{5}x+h \rightarrow 1 = -\frac{4}{5}x+h \rightarrow h = \frac{9}{5}$$

$$BH = \sqrt{(3-\frac{9}{5})^2 + (\frac{9}{5}-1)^2} = \sqrt{\frac{900}{25}} = \frac{30}{5} = 6$$

اداره جواب
صفحه آخر

۵

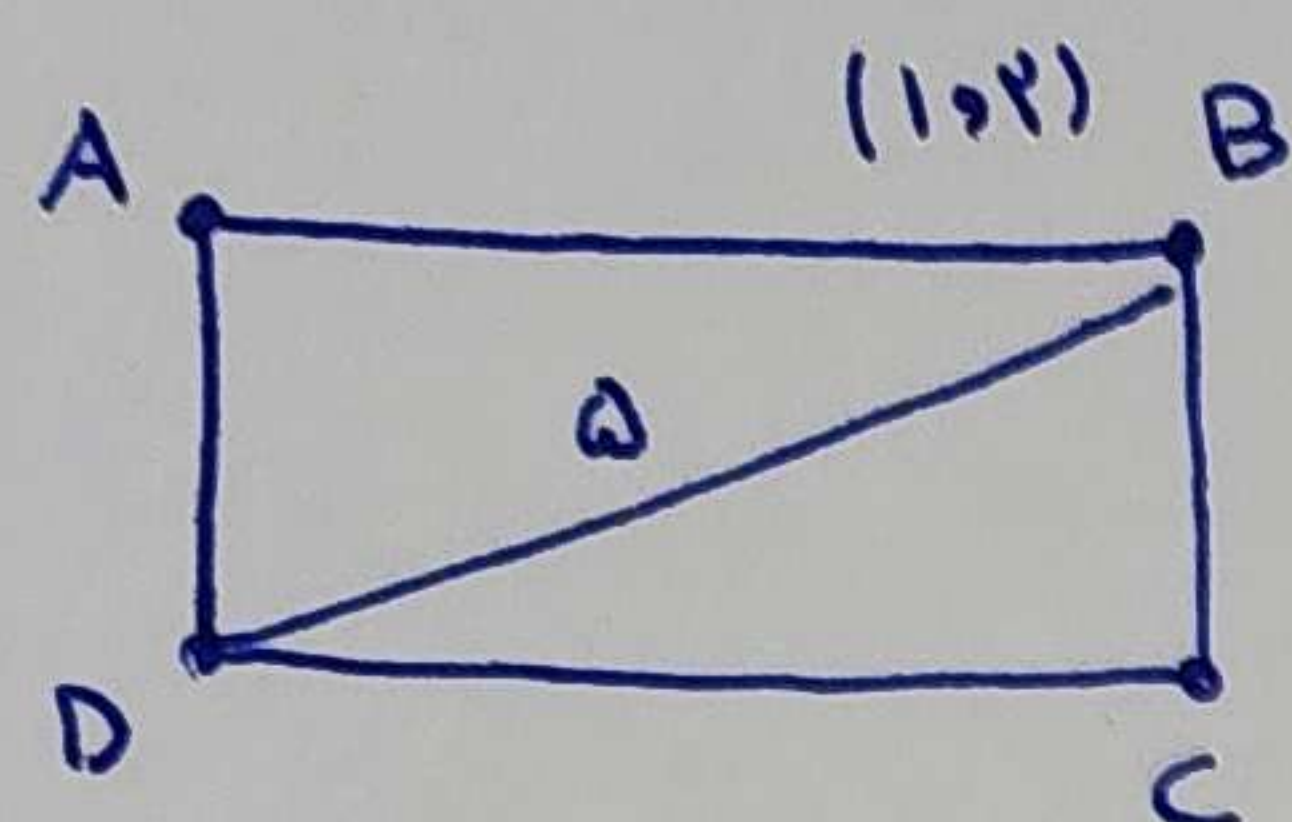
$$y = mx + h \rightarrow m = \frac{-4}{\frac{4}{3}} = -1 \Rightarrow y = -1x - 4 \quad (x, x) \rightarrow x = -1x - 4$$

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

$$قطر = \frac{4}{3} \sqrt{2} \checkmark$$

(2)

6



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

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

(2)

7

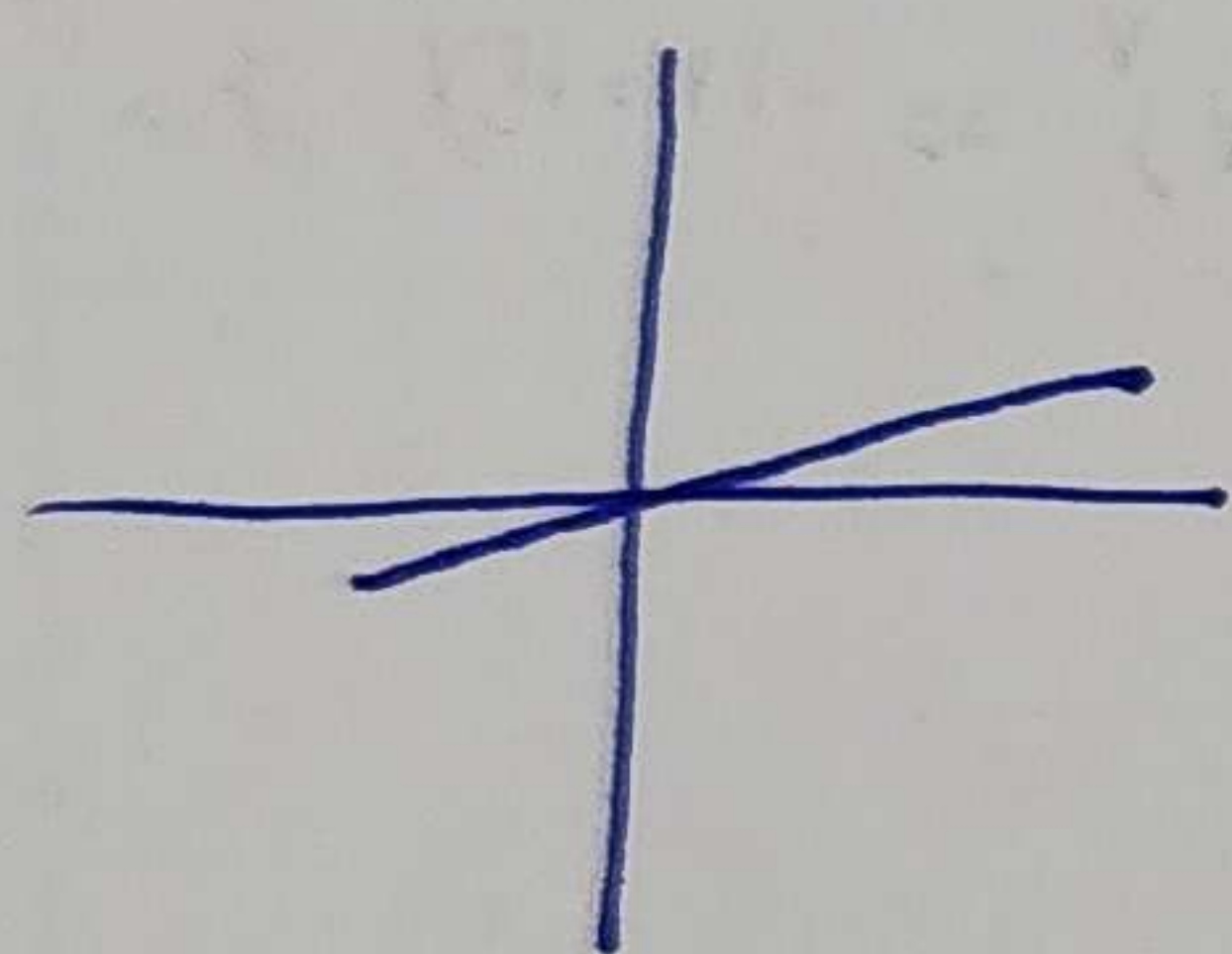
~~$$y = ax + 1 \text{ and } y = x + 1$$~~

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

~~$$a = \frac{1}{a} \Rightarrow a^2 = 1 \Rightarrow a = \pm 1$$~~

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

$$a^2 = 2 - \frac{1}{4} \quad a = \frac{1}{2} \Rightarrow S = \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \frac{1}{2} \checkmark$$

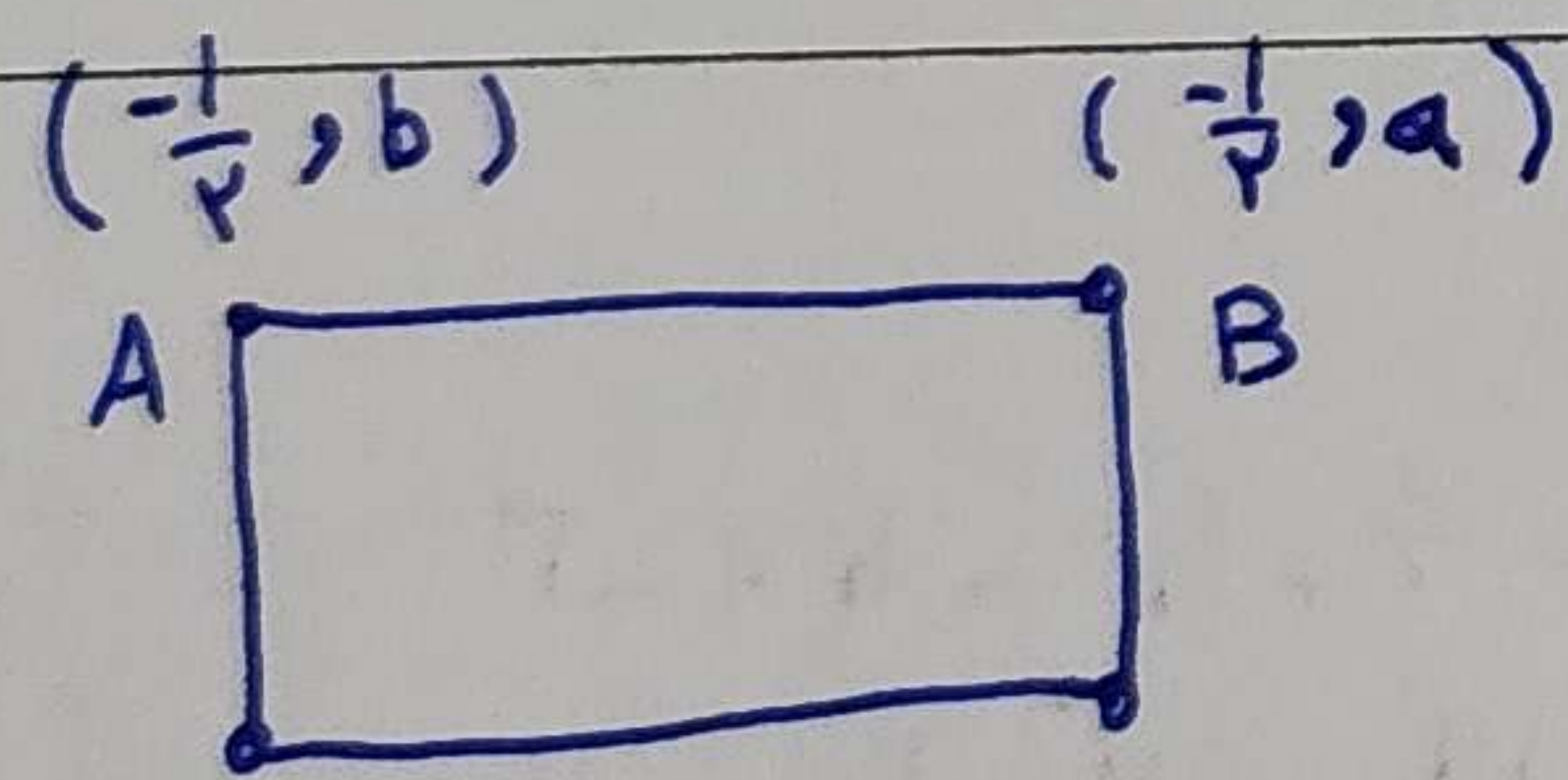


$$\frac{|1 - 0 - 1|}{\sqrt{1+9}} = \frac{1}{\sqrt{10}} \checkmark \quad \begin{cases} x - 3y = 1 \\ y = -3x + 11 \end{cases}$$

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

$$a = \sqrt{\frac{141}{10}} \quad S = \frac{1}{4} \times \frac{1}{\sqrt{10}} \times \sqrt{\frac{141}{10}} = \frac{1}{4} \times \frac{1}{\sqrt{10}} \times \sqrt{141}$$

جواب صفحه آخر...

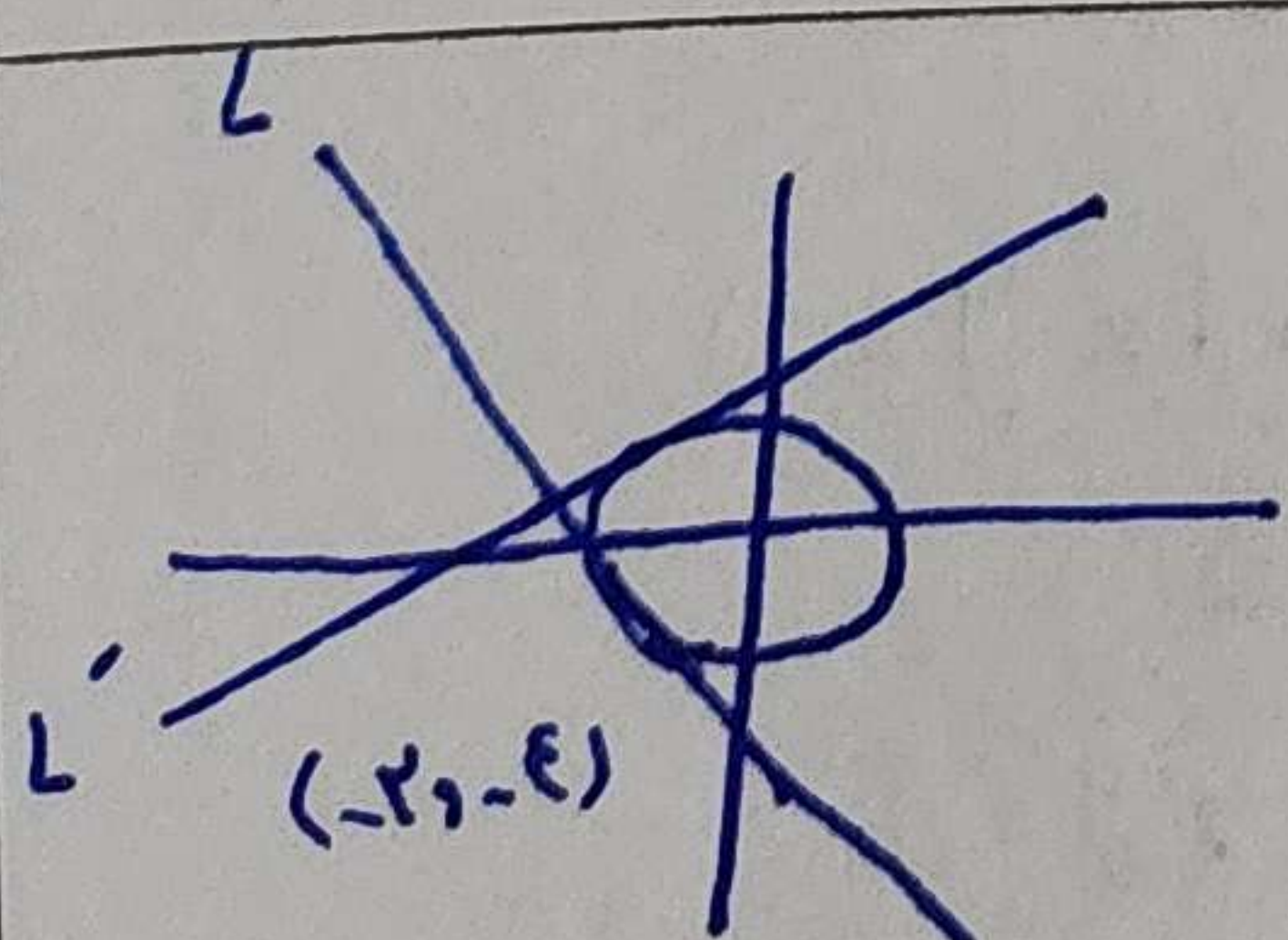


$$m = \frac{b - a}{\frac{1}{4}} = \sqrt{3} \rightarrow b - a = \frac{\sqrt{3}}{4}$$

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

(2)

9



$$L: y = -\frac{3}{4}x + h \rightarrow -4 = \frac{9}{4} + h \rightarrow h = -\frac{25}{4}$$

$$\rightarrow y = -\frac{3}{4}x - \frac{25}{4}$$

$$m_{L'} = \frac{4}{3} \Rightarrow y = \frac{4}{3}x + h \rightarrow y = \frac{4}{3}x + \frac{25}{3}$$

(2)

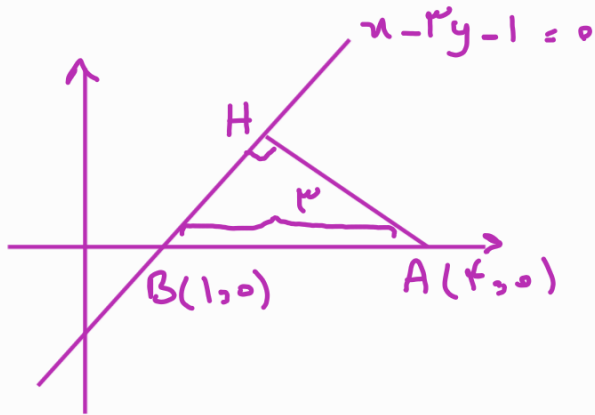
10

$$\frac{|6 + 0 + h|}{\sqrt{\frac{16}{9}}} = 5 \rightarrow h = \frac{25}{2} \rightarrow \frac{4}{3}x + \frac{25}{3} = -\frac{3}{4}x - \frac{25}{4} \rightarrow \frac{25x}{12} = -\frac{175}{12}$$

$$x = -7 \checkmark \quad y = -1 \checkmark \quad -7x - 1 = 7 \checkmark$$

ادامہ سوال ۵

$$BH : AC \text{ : } B \text{ : } \text{فاصلہ} = \frac{|4 - 9 - 17|}{\sqrt{14 + 9}} = \frac{22}{5} = 4,4$$



$$|AH| = \frac{|4 - 0 - 1|}{\sqrt{9 + 1}} = \frac{3}{\sqrt{10}}$$

$$\frac{9}{10} (AH)^2 + (BH)^2 = (AB)^2 \rightarrow BH = \frac{9}{\sqrt{10}}$$

$$S_{\Delta} = \frac{9}{\sqrt{10}} \times \frac{3}{\sqrt{10}} \times \frac{1}{2} = \frac{27}{20} = 1,35$$

۱۸