

$$A(-2, k)$$

$$B(4, m)$$

$$\frac{k-m}{-2-4} = -\frac{1}{2} \Rightarrow \frac{k-m}{-6} = \frac{1}{2}$$

$$\Rightarrow k-m = 3$$

①

②

فاصله بین آنها = $\sqrt{(k-m)^2 + (-2-4)^2}$

$$= \sqrt{3^2 + 4^2} = \sqrt{9+16} = \sqrt{25} = 5$$

$$\Rightarrow \text{مساحت مربع} = 3\sqrt{5} \times 3\sqrt{5} = 45$$

$$A(-1, 2) \quad B(3, 1) \quad C(x, y)$$

③

$$D(-1-x, y+3)$$

$$A(-1, 2) \quad B(3, 1)$$

$$D(-1-x, y+3) \quad C(x, y)$$

$$m_{CD} = \frac{y+3-y}{-1-x-x} = \frac{3}{-1-2x}$$

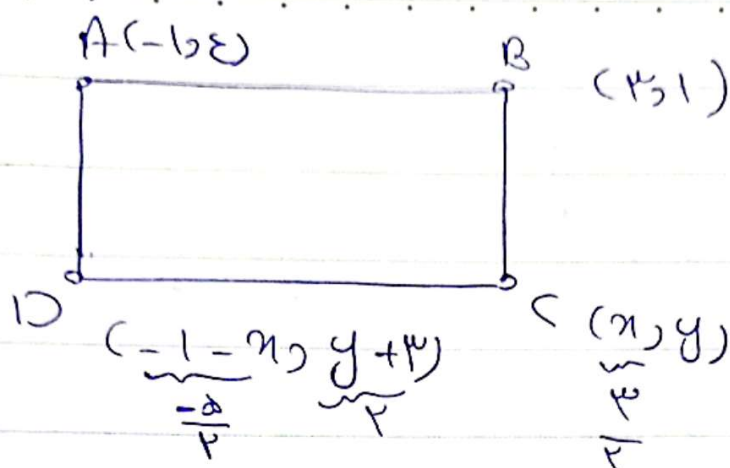
$$m_{AB} = \frac{1-2}{3-(-1)} = \frac{-1}{-4} = \frac{1}{4}$$

$$m_{AB} = m_{CD}$$

$$1+2x = 4 \Rightarrow x = \frac{3}{2}$$

$$y_A + y_C = y_B + y_D$$





1, 10

2

★ با توجه به صفت های بی جبریم A و B روی C است چون:

$$y_A + y_C = y_B + y_D \Rightarrow y + \varepsilon = y + 1 + 3$$

$$\Rightarrow x_A + x_C = x_B + x_D \Rightarrow x - 1 = 1 - x \Rightarrow x = \frac{2}{2}$$

$$m_{DC} = \frac{y+3 - y}{-1-x - x} = \frac{3}{-2} \Rightarrow m_{AD} = \frac{3}{2}$$

$$\Rightarrow \frac{\varepsilon - y - 3}{-1 + \frac{2}{2}} = \frac{1 - y}{\frac{2}{2}} = \frac{2}{2} \Rightarrow \frac{2 - 2y}{2} = \frac{\varepsilon}{2} \Rightarrow y = -1$$

$$AD \text{ طول} = \sqrt{(-1 + \frac{2}{2})^2 + (\varepsilon - 1)^2} = \sqrt{\frac{1}{2} + \varepsilon} = \sqrt{\frac{1+\varepsilon}{2}} = \frac{\sqrt{1+\varepsilon}}{\sqrt{2}}$$

$$CD \text{ طول} = \sqrt{(-\frac{2}{2} - \frac{2}{2})^2 + (1+1)^2} = \sqrt{2 + 4} = \sqrt{6}$$

$$\Rightarrow \text{مساحت} = (\frac{2}{2} + \frac{2}{2}) \times 1 = 2$$

$$2m x + (m^2 - 1) y = 3 \quad (1)$$

$$y_0 \text{ نوبت} \Rightarrow \tan \theta_0 = \frac{3}{\sqrt{3}} \quad (2)$$

$$\Rightarrow \frac{-2m}{(m^2 - 1)} = \sqrt{3} \Rightarrow -2m = \sqrt{3} m^2 - \sqrt{3}$$

$$\sqrt{3} m^2 + 2m - \sqrt{3} = 0$$

$$\rightarrow \Delta = 4 + 3 \times 3 = 17 \rightarrow \sqrt{17}$$

$$\rightarrow \frac{\text{اختلاف مقادير}}{\text{مقادير}} = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{17}}{|\sqrt{3}|} = \frac{\epsilon}{\sqrt{3}} = \frac{\epsilon \sqrt{3}}{3}$$

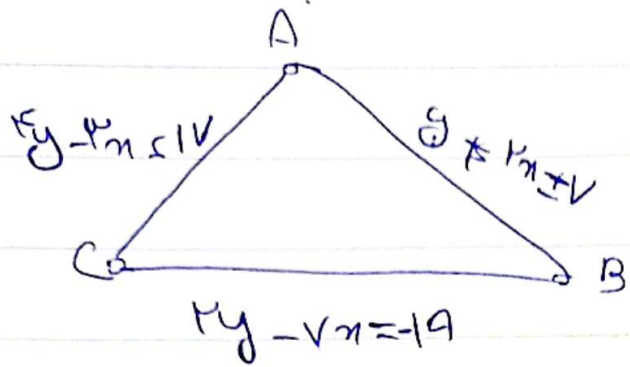
$$A(6, 9) \quad B(3, 3) \quad C(7, 11) \quad (3)$$

* خط A-شعاع = 5 - 3 = 2 : خط BC

$$BC \text{ شعاع} \rightarrow m = \frac{11 - 3}{7 - 3} = \frac{8}{4} = 2 \Rightarrow 2x + b = y$$

$$\rightarrow 4 + b = 3 \Rightarrow b = -1 \Rightarrow BC = 2x - 1 = y - 2x + 3 = 0$$

$$r = \frac{|x_0 a + y_0 b + c|}{\sqrt{a^2 + b^2}} = \frac{|-2 \times 6 + 9 \times 1 + 3|}{\sqrt{4 + 1}} = \frac{10}{\sqrt{5}} = \frac{10\sqrt{5}}{5} = 2\sqrt{5}$$



(2) (5)

☆ ارتفاع BH = فاصله از اس
A-C منع B
(3 د 1)

→ برضو د ABC اس =

$$\Rightarrow y + 2x = 14 \text{ و } y - 2x = -14 \Rightarrow y - 2x = \frac{y + 2x - 14}{2}$$

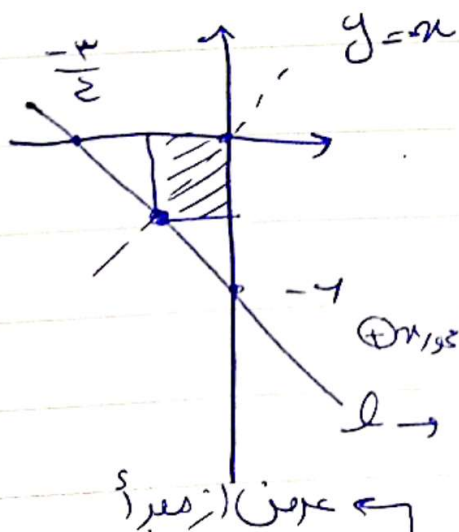
$$14 - 2x = y - 2x - 14$$

$$11x = 28$$

$$\text{فاصله } AC = \frac{|Ax + By + C|}{\sqrt{A^2 + B^2}}$$

$$y - 2x = -14 \Rightarrow$$

$$= \frac{|x - 2 - 14|}{5} = \frac{12}{5} = \textcircled{12/5}$$



(4) یک اس روی مبدأ مختصات است
← قطر آن روی نیمه ساز ناحیه (1) و (3) است

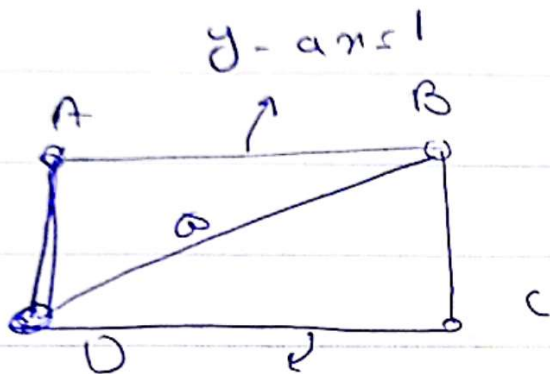
$$\text{زاویه با محور } x \rightarrow m = - \left| \frac{4}{\frac{1}{\frac{1}{3}} \frac{1}{4}} \right| = - \left| \frac{4 \times \frac{1}{3}}{\frac{1}{4}} \right| = -12$$

$$\Rightarrow -12x - 4 = x \Rightarrow -4 = 13x \Rightarrow x = -\frac{4}{13}$$

$$y = -\frac{4}{13}$$

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$$\text{اندازه قدر} = \sqrt{\left(-\frac{2}{\sqrt{2}} - 0\right)^2 + \left(\frac{2}{\sqrt{2}} - 0\right)^2} = \frac{2\sqrt{2}}{\sqrt{2}}$$



AB و CD → می



$$\frac{a}{a'} = \frac{b}{b'} \neq \frac{c}{c'}$$



$$ay - x = a - 1$$

$$\frac{-a}{-1} = \frac{1}{a} \neq \frac{-1}{1-a}$$

$$AD: y - ax - 1 = 0$$

$$-a^2 = -1$$

$$DC = ay - x - a + 1 = 0, \quad a^2 \leq 1 \Rightarrow a = \pm 1$$

نکته: A رأس A باید روی خط موازی با AB باشد (باید ثابت کرد)

$$\textcircled{1} a = 1 \Rightarrow AB: y - x - 1 = 0 \Rightarrow 2 - 1 - 1 = 0 \checkmark \checkmark$$

$$DC: y - x = 0 \Rightarrow 2 - 1 \neq 0$$

$$\textcircled{2} a = -1 \Rightarrow AB: y + x = 1 \Rightarrow 2 + 1 \neq 1 \times \times$$

$$\hookrightarrow DC: -y - x = -2 \Rightarrow -2 - 1 \neq -2 \times \times$$

$$BC \text{ موازی} = DC \text{ و } AB \text{ موازی}$$

$$1 = a \quad \text{False}$$

Subject:

Date:

Sa Su Mo Tu We Th Fr

$$d = \frac{|c - c'|}{\sqrt{a^2 + b^2}} =$$

$$AB: y - x = 1 \quad CD: y - x = 0$$

$$\Rightarrow \frac{1}{\sqrt{2}} = BC$$

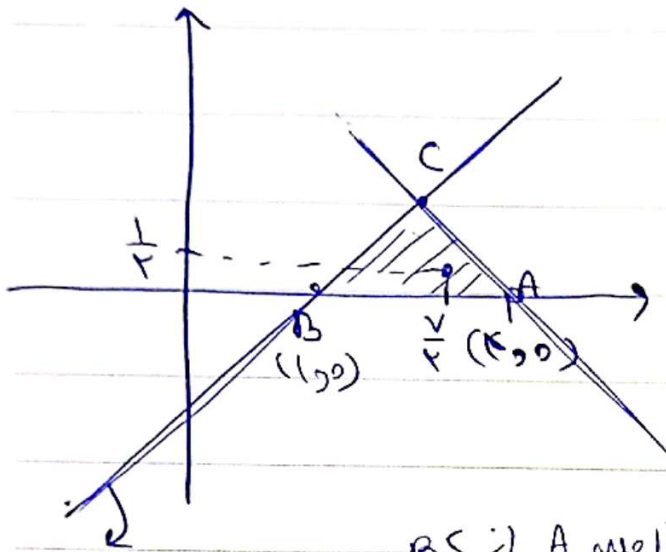
$$\Rightarrow \frac{1}{\sqrt{2}} - BC = CD \Rightarrow \sqrt{2} - \frac{1}{\sqrt{2}} = \sqrt{\frac{2g}{f}}$$

$$\Rightarrow 8 = \frac{v}{\sqrt{f}} \times \frac{1}{\sqrt{f}} = \frac{v}{f} = \boxed{\frac{v}{f}} = \frac{v}{\sqrt{f}}$$

in (Page)

A(4,0)

①



* ابتدا برای محاسبه طول نقطه

B برقرار $x-3y=1$ بنامورد n را بررسی می کنیم:

$$n-0=1 \Rightarrow \boxed{n=1}$$

همین‌وقت داده سوال طول میانی از افتد با نام A از B است

$$x-3y=1$$

برابر است پس ابتدا AH را حساب می کنیم:

$$AH = \frac{|4x - 3y - 1|}{\sqrt{4+1}} = \frac{3}{\sqrt{5}}$$

حال ② حالت داریم: ① ضلع AC برابر $\frac{3}{\sqrt{5}}$ و ② ضلع BC $\frac{3}{\sqrt{5}} = BC$ اما سوال از ما حدیث مقدار مساحت را می خواهد پس باید بماند ما بهترین مساحت را داشته باشد.

$$\Rightarrow \left(x, \frac{x-1}{3}\right) \rightarrow \text{if } AC = \frac{3}{\sqrt{5}}$$

$$x-3y=1$$

$$\Rightarrow (x-4)^2 + \left(\frac{x-1}{3}\right)^2 = \frac{9}{5}$$

$$100x^2 - 740x + 1580 = 81$$

$$100x^2 - 740x + 1499 = 0$$

← لازم

$$9x^2 + 128 - 72x + 4x^2 + 1 - 2x = \frac{9}{5}$$

$$(100x^2 - 740x + 1499) \cdot 10 = 81$$

$$\Delta = \frac{VK_0}{0.740} - \frac{K_0 \times 1349}{0.740} = 0$$

$$\Rightarrow \alpha = \frac{VK_0}{K_0} = \boxed{\frac{13}{V}} \quad \beta = \frac{1 - \alpha}{\mu} = \frac{\mu V - 1}{\mu} = \boxed{0.9}$$

$$\Rightarrow C = \left(\frac{\mu V}{10} + \frac{9}{10} \right) \rightarrow B < = \sqrt{\left(\frac{\mu V}{10} - 1 \right)^2 + \left(\frac{9}{10} \right)^2} \quad (2)$$

$$= \sqrt{\left(\frac{\mu V}{10} \right)^2 + \left(\frac{9}{10} \right)^2} = \frac{9\sqrt{10}}{10} = \frac{9}{\sqrt{10}}$$

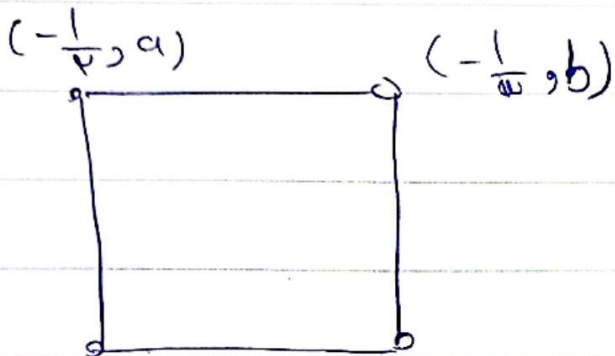
$$\Rightarrow \delta = \frac{9}{\sqrt{10}} \times \frac{\mu}{\sqrt{10}} \times \frac{1}{\mu} = \frac{\mu V}{K_0} = \underline{135}$$

چون $B < A$ و $C < A$ پس چون B و C از A بزرگتر است و در واقع چون هدف نقدی بودن صفر داشته باید طریقی را مقایسه کنیم
 چون طول A بزرگتر است و ما فاصله از C را حساب نمی کنیم مدول آن
 طول C برابر m باشد $C - x_A < C - x_B >$

$$\left(-\frac{1}{\mu}, a\right) \quad \left(-\frac{1}{\mu}, b\right)$$

(4)

(2)



$$m = \sqrt{\mu}$$

$$\Rightarrow \frac{b-a}{-\frac{1}{\mu} - (-\frac{1}{\mu})}$$

$$= \frac{b-a}{\frac{1}{\mu}} = \sqrt{\mu}$$

$$\text{مساحة} = \sqrt{\left(-\frac{1}{\mu} + \frac{1}{\mu}\right)^2 + (b-a)^2} \quad \frac{b-a}{\frac{1}{\mu}} = \sqrt{\mu}$$

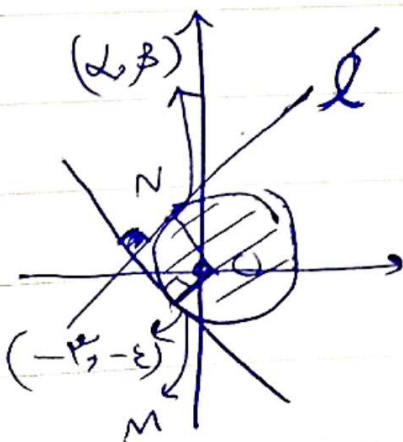
$$\Rightarrow b-a \leq \frac{\sqrt{\mu}}{2}$$

$$= \sqrt{\frac{1}{\mu^2} + \frac{\mu}{4}} = \sqrt{\frac{2}{\mu^2}} \leq \frac{1}{2} = \frac{1}{\mu}$$

$$\text{مساحة} = \text{مساحة} \times \sqrt{2} = \frac{1}{\mu} \times \sqrt{2} \leq \frac{\sqrt{2}}{2}$$

(b)

(2)



$$\sqrt{\alpha^2 + \beta^2} = \omega \rightarrow \omega = \frac{\alpha - \beta}{\beta - \alpha} = \frac{\alpha}{\beta}$$

$$\text{مساحة} = \sqrt{\mu^2 + \epsilon^2} = \omega$$

$$\frac{\alpha}{\beta} = \frac{\mu}{\epsilon} \Rightarrow \frac{\alpha}{\beta} = \frac{\mu}{\epsilon}$$

$$\frac{\alpha}{\beta} = \frac{\mu}{\epsilon} \Rightarrow \alpha = \frac{\mu}{\epsilon} \beta \Rightarrow \frac{1}{4} \beta^2 + \beta^2 = 2\omega \Rightarrow \beta = \frac{2\omega}{\alpha}$$

ناتمام $\rightarrow \mu - \alpha$ و $\beta = 3$

$$\frac{-\mu}{\mu} = \frac{-\mu}{\mu} \Rightarrow \frac{-\mu}{\mu} = -1$$

فلا $\rightarrow$ شیب خط $\rightarrow$ عدد $\rightarrow$ شیب خط

$$\rightarrow -\frac{\mu}{3}x + b = y \Rightarrow -\frac{\mu}{3}x - \mu + b = -\epsilon$$

$$\frac{\mu}{3} + b = -\epsilon \Rightarrow b = -\epsilon - \frac{\mu}{3} = -\frac{10}{3}$$

$$\Rightarrow \frac{\mu}{3}x - \frac{10}{3}$$

$\frac{\mu}{3}x + b = y$

$$\frac{\mu}{3}x + b = y$$

$$\frac{\mu}{3}x - \mu + b = \mu$$

$$\frac{\mu}{3} + b = \mu \Rightarrow b = \mu - \frac{\mu}{3} = \frac{2\mu}{3}$$

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Date:

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$$-\frac{K}{K}x - \frac{V\delta}{K} = \frac{K}{K}x + \frac{V\delta}{K}$$

$$-9x - V\delta = 14x + 10$$

$$V\delta x = -14\delta \Rightarrow x = -V \quad y = -1$$

$$\boxed{x \times y = V}$$