

$$m = \frac{\Delta y}{\Delta x} = \frac{m - k}{x - (-1)} = \frac{m - k}{x} = -\frac{1}{x} \Rightarrow m - k = -x \Rightarrow |m - k| = x = \Delta y$$

$$AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5$$

$$S = 25$$

$$AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{4^2 + 3^2} = 5$$

$$m_{AB} = m_{CD} = -\frac{x}{x} = -1 \Rightarrow -1 - 2x = -x \Rightarrow x = \frac{1}{2} \Rightarrow C(\frac{1}{2}, 4) D(-\frac{1}{2}, y+3)$$

$$m_{BC} \cdot m_{CD} = -1 \Rightarrow m_{BC} = \frac{x}{x} = \frac{y-1}{-\frac{x}{2}} \Rightarrow \frac{x}{x} = -\frac{x(y-1)}{x} \Rightarrow y-1 = -2 \Rightarrow y = -1$$

$$\Rightarrow C(\frac{1}{2}, -1) D(-\frac{1}{2}, 2)$$

$$BC = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(\frac{1}{2})^2 + 3^2} = \frac{5}{2} \Rightarrow \text{مساحت مستطیل} = 2 \times (\frac{5}{2} + 5) = 15$$

$$\left. \begin{aligned} y &= \left(\frac{-2m}{m^2 - 1} \right) x + \frac{3}{m^2 - 1} \\ q &= \tan \alpha = \sqrt{3} \end{aligned} \right\} \Rightarrow \frac{-2m}{m^2 - 1} = \sqrt{3} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$$

$$|m_1 - m_2| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{4 + 12}}{\sqrt{3}} = \frac{4}{\sqrt{3}} = \frac{4\sqrt{3}}{3}$$

$$BC: y = 2x - 3 = y - 2x + 3 = 0$$

$$m = \frac{\Delta y}{\Delta x} = \frac{11 - 5}{5 - 2} = \frac{6}{3} = 2 \Rightarrow y = 2x + b \Rightarrow 2 = 9 + b \Rightarrow b = -7$$

$$AH = \frac{|9 - 2 + 3|}{\sqrt{1^2 + (-2)^2}} = \frac{10}{\sqrt{5}} = 2\sqrt{5}$$

$$\begin{aligned} \text{معادله} & \quad \text{معادله} \\ AB &= BC \\ y &= 2x + 7 \quad y = \frac{4}{3}x - \frac{19}{3} \end{aligned}$$

$$-2x + 7 = \frac{4}{3}x - \frac{19}{3} \Rightarrow \frac{11}{3}x = \frac{38}{3} \Rightarrow x = \frac{38}{11} \Rightarrow y = \frac{115}{11}$$

$$BH = \frac{|2 - 9 + 19|}{\sqrt{1^2 + (-2)^2}} = \frac{12}{\sqrt{5}} = \frac{12\sqrt{5}}{5}$$

$$\frac{x}{-\frac{r}{\varepsilon}} + \frac{y}{-\frac{r}{\varepsilon}} = 1 \Rightarrow -\varepsilon x - \frac{r}{\varepsilon} y = \frac{r}{\varepsilon} \xrightarrow{x=y} -\frac{r}{\varepsilon} x = \frac{r}{\varepsilon} \Rightarrow x = -\frac{r}{\varepsilon}, y = -\frac{r}{\varepsilon}$$



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$$\left. \begin{array}{l} d_1: y = ax + 1 \\ d_2: y = \frac{1}{a}x + \frac{a-1}{a} \end{array} \right\} \Rightarrow a = \frac{1}{a} \Rightarrow a^2 = 1 \Rightarrow a = \pm 1$$

$a = 1 \rightarrow \begin{cases} d_1: y = x + 1 \rightarrow (1, 2) \\ d_2: y = x \end{cases}$
 $a = -1 \rightarrow \begin{cases} d_1: y = -x + 1 \rightarrow (1, 2) \\ d_2: y = -x \end{cases}$

$$\left. \begin{array}{l} d_1: y = x + 1 \\ d_2: y - x = 0 \end{array} \right\} \Rightarrow \frac{|1-0|}{\sqrt{1+1}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$



$$\sqrt{2} \cdot \frac{1}{\sqrt{2}} = \sqrt{\frac{1}{2}} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \Rightarrow \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \left(\frac{1}{2}\right)$$

$x - 2y = 1 \Rightarrow y = \frac{1}{2}x - \frac{1}{2} : d_1$

$d_2: y = -2x + b \xrightarrow{0 = -12 + b} b = 12 \Rightarrow d_2: y = -2x + 12$

$d_1 = d_2 \Rightarrow \frac{1}{2}x - \frac{1}{2} = -2x + 12 \Rightarrow \frac{1}{2}x = \frac{25}{2} \Rightarrow x = 25$

$0 = \frac{1}{2}x - \frac{1}{2} \Rightarrow x = 1$

$C(1, 0)$
 $A(1, 0)$

$\Rightarrow AC = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{2 + 0} = \sqrt{2}$

$BH = \frac{0.9}{1} = 0.9$

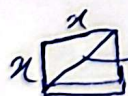
$S_{ABC} = \frac{2 \times 0.9}{2} = \frac{1.8}{2} = 0.9$

$$m = \frac{\Delta y}{\Delta x} = \sqrt{3} \Rightarrow \frac{b-a}{\frac{1}{\sqrt{3}} - (-\frac{1}{\sqrt{3}})} = \frac{b-a}{\frac{2}{\sqrt{3}}} \Rightarrow b-a = \frac{\sqrt{3}}{2}$$

$$A(-\frac{1}{\sqrt{3}}, a)$$

$$B(-\frac{1}{\sqrt{3}}, b)$$

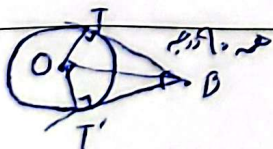
$$\Rightarrow AB = \sqrt{(\Delta x)^2 + (\Delta y)^2} = \sqrt{(\frac{1}{\sqrt{3}})^2 + (\frac{\sqrt{3}}{2})^2} = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$



اندازه قطر $\sqrt{2}$ اندازه قطر

$$\sqrt{2} \times \frac{1}{\sqrt{3}} = \frac{\sqrt{2}}{\sqrt{3}} \rightarrow$$

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$$m_{OT} = \frac{0 - (-1)}{0 - (-1)} = \frac{1}{1} = 1$$

$$m_{OT} \times m_{OT'} = -1$$

$T(-1, -1)$ است
 (برخورد مماس رسم شده با دایره است)

$$r = OT = OT' = \sqrt{1^2 + 1^2} = \sqrt{2}$$

$$\Rightarrow m_{OT'} = -\frac{1}{1} = -1 \Rightarrow OA' : y = -x + b \xrightarrow{0 = -1 + b} b = 1 \Rightarrow T'(x, -x)$$

$$\Rightarrow OT' = \sqrt{x^2 + (-x)^2} = \sqrt{2x^2} = \sqrt{2} |x| = \sqrt{2} \Rightarrow -\frac{1}{\sqrt{2}}x = 1 \Rightarrow x = -\sqrt{2} \Rightarrow T'(-\sqrt{2}, \sqrt{2})$$

x را باید در امتداد x قرار دهیم

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