

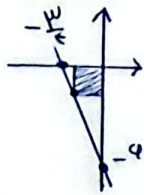
$A(-9, k) \quad B(5, m) \quad \text{شیب} = -\frac{1}{4}$
 $\overline{AB} = \sqrt{(m-k)^2 + (5+9)^2} =$
 $m_{AB} = \frac{m-k}{5+9} = -\frac{1}{4}$
 $\frac{1}{4}(m-k) = -\frac{9}{4} \rightarrow m-k = -9$
 $AB = \sqrt{9 + 36} = \sqrt{45}$
 $S_{\square} = (\sqrt{45})^2 = 45$

$A(1, 5), B(3, 1), C(2, 4), D(-1-x, y+3)$
 $x_A + x_C = x_B + x_D$
 $-1+x = 3-1-x \Rightarrow x = \frac{3}{2}$
 $y_A + y_C = y_B + y_D$
 $5+y = 1+y+3 \Rightarrow (-\frac{3}{2})x^2 + (-3)(y-1) = 0$
 $BC = \sqrt{(-2)^2 + (-\frac{3}{2})^2} = \frac{5}{2}$
 $\Rightarrow (-\frac{3}{2})x^2 + (-3)(y-1) = 0$
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$ymx + (my-1)y = 3 \quad \tan \alpha \geq 45^\circ = \sqrt{3}$
 $m = \frac{-ym}{my-1} = \sqrt{3} \rightarrow m = \sqrt{3}my - \sqrt{3} + m = 0$
 $\Delta \Rightarrow 5 - (-\sqrt{3})(\sqrt{3}) \Rightarrow 5+3 = 8$
 $\Rightarrow \frac{-5 \pm \sqrt{8}}{2\sqrt{3}} \rightarrow m_1 = \frac{-5-\sqrt{8}}{2\sqrt{3}} \rightarrow \frac{y}{x\sqrt{3}} = \frac{-5-\sqrt{8}}{2\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = -\sqrt{3}$
 $\rightarrow m_2 = \frac{-5+\sqrt{8}}{2\sqrt{3}} \rightarrow \frac{y}{x\sqrt{3}} = \frac{-5+\sqrt{8}}{2\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{3}}{2}$

$AH = 2\sqrt{5}$
 $M_{BC} = \frac{A}{s} = 4$
 $AH = \frac{|19-2+3|}{\sqrt{5+1}} = \frac{10}{\sqrt{6}} \times \frac{\sqrt{6}}{\sqrt{6}} = \frac{10\sqrt{6}}{6} = \frac{5\sqrt{6}}{3}$
 $y - \frac{y}{x} = 4 \cdot (x - \frac{y}{x})$
 $y - 3 = 4x - 4 \rightarrow y = 4x - 1 \Rightarrow y - 4x + 1 = 0$

$AB: y+2x = 7, AC: 5y-3x = 17, BC: 2y-7x = -19$
 $y = \frac{7}{2}x + \frac{7}{2}$
 $y = \frac{17}{5}x - \frac{19}{5}$
 $\frac{7}{2}x + \frac{7}{2} = \frac{17}{5}x - \frac{19}{5}$
 $35x + 35 = 34x - 38$
 $x = -73, y = -112$
 $BH = \frac{|19-2+3|}{\sqrt{(\frac{3}{2})^2 + 1}} = \frac{10}{\sqrt{1.25}} = \frac{10\sqrt{2}}{\sqrt{5}} = 2\sqrt{10}$



$$m = \frac{-4-0}{0+1} = -4$$

$$y = -4x + 4$$

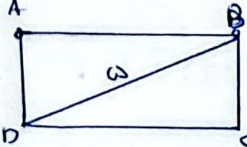
$$-4x - 4 = 0 \rightarrow |x| = \frac{4}{4} = 1$$

$$x = \pm 1$$

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$$y - ax = 1, \quad ay - x = a - 1 \Rightarrow \frac{1}{a} \cdot \frac{1}{y}$$



$$y - ax = 1 \rightarrow a = 1$$

$$y - x = 0 \rightarrow y = x$$

$$\frac{|x - (x+1)|}{\sqrt{(-1)^2 + 1^2}} = \frac{1}{\sqrt{2}} \Rightarrow x = 0$$

$$\omega^2 = \left(\frac{1}{\sqrt{2}}\right)^2 + (AB)^2$$

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

$$S \Rightarrow \frac{1}{\sqrt{2}} \times \frac{1}{\sqrt{2}} = \frac{1}{2}$$

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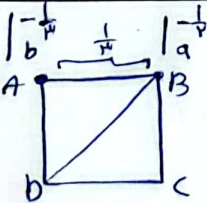
$$d = \frac{|-11|}{\sqrt{1^2 + (-3)^2}} = \frac{11}{\sqrt{10}}$$

$$y > 0, x > 0 \Rightarrow y = \frac{x-1}{x}$$

$$y > 0 \Rightarrow x > 1 \Rightarrow y = -\frac{1}{x}$$

$$BC = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \Rightarrow BC = \sqrt{(x-1)^2 + \left(-\frac{1}{x} - \frac{1}{x}\right)^2} \Rightarrow BC = \sqrt{(x-1)^2 + \frac{4}{x^2}}$$

$$S = \frac{1}{2} \times \left(\frac{\sqrt{10}}{2}\right) \times (x-1) \times \frac{1}{x} \Rightarrow \frac{1}{2} \times \frac{\sqrt{10}}{2} \times \frac{(x-1)}{x} \Rightarrow \frac{\sqrt{10}}{4} \times \frac{(x-1)}{x}$$



$$L_A \Rightarrow y - y_1 = \sqrt{2}(x - x_1)$$

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

$$m_{AB} = \frac{a-b}{-\frac{1}{b} + \frac{1}{a}} \Rightarrow \sqrt{2} = \frac{a-b}{-\frac{1}{b} + \frac{1}{a}}$$

$$a - b = -\frac{\sqrt{2}}{a}$$

$$BD = \frac{\sqrt{2}}{a}$$

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$$O(0,0) \quad P(-3, -4) \Rightarrow OP = \sqrt{(-3)^2 + (-4)^2} = 5$$

$$x^2 + y^2 = 25 \quad m = \frac{0+4}{0+3} = \frac{4}{3} \Rightarrow L: y - 0 = \frac{4}{3}(x - 0) \Rightarrow y = \frac{4}{3}x$$

$$y + 4 = -\frac{3}{4}(x + 3) \Rightarrow y + 4 = -\frac{3}{4}x - \frac{9}{4} \Rightarrow y = -\frac{3}{4}x - \frac{25}{4}$$

$$\omega = \frac{|b|}{\sqrt{1 + \left(\frac{4}{3}\right)^2}} \Rightarrow b = \frac{25}{4} \Rightarrow M = \frac{3}{4}x + \frac{25}{4} = y \Rightarrow \frac{3}{4}x + \frac{25}{4} = -\frac{3}{4}x - \frac{25}{4} \Rightarrow x = -5$$

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