

$$A(-2, 4)$$

$$B(1, m)$$

$$m = -\frac{1}{2}$$

$$\text{شیب} = \frac{m-k}{f-(-2)} = -\frac{1}{2} \rightarrow m-k = -3$$

$$\rightarrow S \rightarrow (AB)^2 \rightarrow (1-(-2))^2 + (m-k)^2 = 9 + 9 = 18$$

$$A(-1, 4)$$

$$B(3, 1)$$

$$C(x, y) \rightarrow AB = B-A = (3-(-1), 1-4) = (4, -3)$$

$$D(-1-x, y+3) \rightarrow BC = (x-3, y-1) \xrightarrow{\text{نقطه میانی}} (4, -3) \times (x-3, y-1) = 0$$

$$\Rightarrow 4(x-3) - 3(y-1) = 0$$

$$\xrightarrow{A+C=B+D} (-1, 4) + (x, y) = (3, 1) + (-1-x, y+3) \rightarrow x = \frac{5}{2}, y = -1$$

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

$$m = \tan \theta = \sqrt{3} \Rightarrow \frac{-2m}{m^2-1} = \sqrt{3} \Rightarrow \sqrt{3}m^2 + 2m - \sqrt{3} = 0$$

$$A = f + 12 = 19 \Rightarrow m < \frac{19}{\sqrt{3}} \rightarrow \left| \frac{19}{\sqrt{3}} - \frac{0}{\sqrt{3}} \right| = \left| \frac{19}{\sqrt{3}} \right| = \frac{19}{\sqrt{3}}$$

$$\Rightarrow \frac{19}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{19\sqrt{3}}{3}$$

$$A(1, 4)$$

$$B(3, 3) \rightarrow m_{BC} = \frac{11-3}{V-3} = 2$$

$$C(V, 11) \rightarrow BC = y-3 = 2(x-3) \rightarrow 2x - y - 5 = 0$$

$$A(1, 4) \rightarrow AH = \frac{|2(1) - 4 - 5|}{\sqrt{2^2 + (-1)^2}} = \frac{1 \cdot \sqrt{5}}{\sqrt{5}} = \boxed{2\sqrt{5}}$$

$$AB = y + 2x = V$$

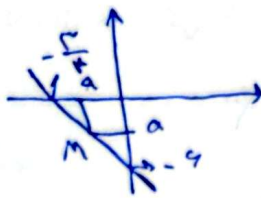
$$AC = fy - 2x = IV$$

$$BC = 2y - vx = -19$$

$$\rightarrow x = 3, y = 1$$

$$BH = AC \Rightarrow \frac{|1f - 4 - 1v|}{\sqrt{1^2 + 1^2}} = \frac{22}{2} = f, f$$

$$k_{AB} = 2 \quad (A, B, C) = 2 \left(4 + \frac{0}{2} \right) = \boxed{18}$$



$$\frac{1}{-\frac{1}{f}} + \frac{y}{-g} = 1 \rightarrow \frac{y}{g} = \frac{-fa}{f} - 1 \xrightarrow{\times g} y = -\frac{fa}{g} - g$$

$$ay = -\frac{fa}{g} - g \rightarrow ga = -f \rightarrow a = -\frac{f}{g}$$

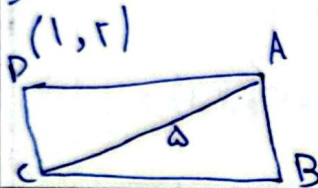
$$b = \frac{f}{g} \sqrt{f} \times \frac{\sqrt{f}}{\sqrt{f}} = \boxed{\frac{f}{f\sqrt{f}}}$$

8

$$y = ax + 1$$

$$ay - a = 1$$

line a



$$\begin{cases} y - ax = 1 \rightarrow m = -\frac{1}{a} \rightarrow a = -\frac{1}{m} \\ ay - a = 1 \rightarrow m' = -\frac{1}{a} \rightarrow a = -\frac{1}{m'} \end{cases}$$

$$|a| < \begin{cases} y - ax = 1 \\ y - ax = 0 \end{cases} \Rightarrow \begin{cases} a - y + 1 = 0 \\ a - y = 0 \end{cases} \Rightarrow \frac{|1-0|}{\sqrt{1+0}} = \frac{1}{\sqrt{1}}$$

$$|a| < \begin{cases} y + ax = 1 \\ y + ax = 0 \end{cases} \Rightarrow \begin{cases} a + y + 1 = 0 \\ a + y = 0 \end{cases} \Rightarrow \frac{|1+0|}{\sqrt{1+0}} = \frac{1}{\sqrt{1}}$$

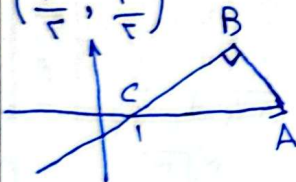
$$\Rightarrow a = \frac{f}{g} \rightarrow a = \frac{f}{g} \Rightarrow S = \frac{1}{2} \times \frac{f}{g} \times \frac{1}{\sqrt{f}} = \boxed{\frac{1}{2\sqrt{f}}}$$

$$A(f, 0)$$

$$AB = \frac{|f-0-1|}{\sqrt{1+0}} = \frac{f}{\sqrt{1}}$$

$$a = \frac{f}{g}$$

$$\left(\frac{f}{g}, \frac{1}{g}\right)$$



$$\tan C = m_{BC} = \frac{1}{f}$$

$$\tan C = \frac{AB}{BC} = \frac{1}{f} \rightarrow BC = \frac{q}{\sqrt{1}} \rightarrow S_{ABC} = \frac{1}{2} \times \frac{f}{\sqrt{1}} \times \frac{q}{\sqrt{1}} = \frac{1f, q}{2} = \frac{1, f, q}{2}$$

1

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

$$m_B = \sqrt{f} \rightarrow m = \frac{a-B}{-\frac{1}{f} - \frac{1}{f}} = \sqrt{f} \rightarrow a-B = -\frac{\sqrt{f}}{g}$$

$$|AB| = \sqrt{(a-B)^2 + \left(-\frac{1}{f} - \frac{1}{f}\right)^2} = \sqrt{\frac{f}{g^2} + \frac{1}{f^2}} = \frac{f}{g} = \frac{1}{f}$$

$$b = \sqrt{f} |AB| = \sqrt{f} \times \frac{1}{f} = \boxed{\frac{\sqrt{f}}{f}}$$

9

10