

③ p101

$$(1) \begin{cases} x - y + 1 = 0 & \text{--- ①} \\ 2x + y - 7 = 0 & \text{--- ②} \end{cases}$$

①+②より

$$3x - 6 = 0$$

$$x = 2$$

$$y = x + 1$$

$$= 2 + 1$$

$$= 3$$

$$\therefore A(2, 3)$$

(2) $\vec{A}(2, 3)$, $x + 2y - 5 = 0$ の距離 d は

$$d = \frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}}$$

$$= \frac{|1 \cdot 2 + 2 \cdot 3 - 5|}{\sqrt{1^2 + 2^2}}$$

$$= \frac{|2 + 6 - 5|}{\sqrt{5}}$$

$$= \frac{|3|}{\sqrt{5}}$$

$$= \frac{3}{\sqrt{5}}$$

$$= \frac{3 \times \sqrt{5}}{\sqrt{5} \times \sqrt{5}}$$

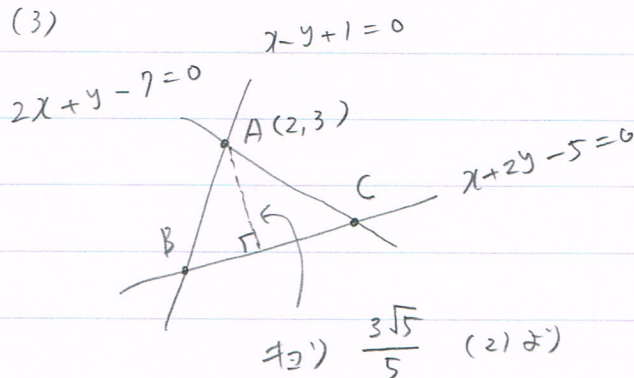
$$= \frac{3\sqrt{5}}{5}$$

$$\therefore \frac{3\sqrt{5}}{5}$$

2点 (x_1, y_1) , (x_2, y_2) 間の距離 d

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

(3)



点 B, C を求めると

$$\begin{cases} x - y + 1 = 0 & \text{--- ①} \\ x + 2y - 5 = 0 & \text{--- ②} \end{cases}$$

① - ②より

$$-3y + 6 = 0$$

$$y = 2$$

$$x = y - 1 = 2 - 1 = 1$$

$\vec{B}(1, 2)$

$$\begin{cases} 2x + y - 7 = 0 & \text{--- ③} \\ x + 2y - 5 = 0 & \text{--- ④} \end{cases}$$

③ - ④ $\times 2$ より

$$2x + y - 7 = 0$$

$$- \quad \left. \begin{array}{l} 2x + 4y - 10 = 0 \\ \hline -3y + 3 = 0 \end{array} \right\}$$

$$-3y + 3 = 0$$

$$y = 1$$

$$x = -2y + 5 = -2 + 5 = 3$$

$\vec{C}(3, 1)$

BCの長さ

$$\begin{aligned} BC &= \sqrt{(3-1)^2 + (1-2)^2} \\ &= \sqrt{4 + 1} \\ &= \sqrt{5} \end{aligned}$$

三角形の面積は

$$BC \times \frac{3}{2} \times \frac{1}{2} = \sqrt{5} \times \frac{3\sqrt{5}}{5} \times \frac{1}{2}$$

$$= \frac{3}{2}$$

$$\therefore \frac{3}{2}$$