

$$\begin{cases} x^2 - xy = 6 \\ y^2 - xy = 3 \end{cases}$$

$$\begin{cases} x(x-y) = 6 \\ y(x-y) = -3 \end{cases}$$

$$x-y = \frac{6}{y}$$

$$\frac{y \cdot 6}{x} = -3 \Rightarrow y = -\frac{1}{2}x$$

$$x + \frac{1}{2}x - \frac{6}{x} = 0$$

$$\frac{2x^2 + x^2 - 12}{2x} = 0$$

$$3x^2 = 12$$

$$x^2 = 4$$

$$x_1 = 2 \Rightarrow y = -\frac{1}{2} \cdot 2 = -1$$

$$x_2 = -2 \Rightarrow y = -\frac{1}{2} \cdot (-2) = 1$$

$$\text{Answer: } (2; -1) \cup (-2; 1)$$

$$\begin{cases} x^2 - 3xy + y^2 + 1 = 0 \\ 2x^2 + 5xy - y^2 - 17 = 0 \end{cases}$$

$$\begin{cases} x^2 - 3xy + y^2 = -1 \quad | \cdot 5 \\ 2x^2 + 5xy - y^2 = 17 \quad | \cdot 3 \end{cases} \Leftrightarrow \begin{cases} 5x^2 - 15xy + 5y^2 = -5 \\ 6x^2 + 15xy - 3y^2 = 51 \end{cases}$$

$$11x^2 + 2y^2 = 46$$

$$\text{Answer: } (2; 1) \cup (-2; -1)$$

$$(2; 1) \cup (-2; -1)$$

Здесь можно только по формулам

$$x_1 = 2 \quad y_1 = 1$$

$$x_2 = -2 \quad y_2 = -1$$

$$\begin{matrix} x_3 = 2 & y_3 = -1 \\ x_4 = -2 & y_4 = 1 \end{matrix}$$

т.к. при перестановке
букв не меняется
прав. часть
уравнения.

$$\begin{cases} \frac{3}{2x+y} + \frac{1}{2x-y} = \frac{2}{5} \quad | \cdot 2 \\ \frac{7}{2x+y} + \frac{2}{2x-y} = \frac{3}{5} \end{cases}$$

$$\Leftrightarrow \begin{cases} \frac{3}{2x+y} + \frac{2}{2x-y} = \frac{4}{5} \\ \frac{7}{2x+y} + \frac{2}{2x-y} = \frac{3}{5} \end{cases}$$

$$\frac{-4}{2x+y} = \frac{1}{5} \Rightarrow 2x+y = -20 \Rightarrow y = -20-2x$$

$$\frac{3}{2x-20-2x} + \frac{1}{2x+20+2x} = \frac{2}{5}$$

$$= \frac{3}{-20} + \frac{1}{4x+20} = \frac{2}{5}$$

$$\frac{1}{4x+20} = \frac{11}{20} \Rightarrow 11(4x+20) = 20$$

$$44x + 220 = 20$$

$$44x = -200$$

$$x = -\frac{50}{11} \Rightarrow y = -20 + \frac{100}{11} = -\frac{120}{11}$$

$$\text{Answer: } \left(-\frac{50}{11}; -\frac{120}{11}\right)$$