

Solving Systems using Elimination

$$\begin{aligned}7x - 3y &= 6 \\ -2x + 5y &= -10\end{aligned}$$

Step 1: Choose one variable to eliminate. Choose wisely.

Look for opposite signs and the same coefficients if possible.

$$5(7x - 3y = 6)$$

$$3(-2x + 5y = -10)$$

$$35x - 15y = 30$$

$$+ \quad -6x + 15y = -30$$

$$29x + 0y = 0$$

$$29x = 0$$

$$x = 0$$

Step 2: Multiply both equations so that your coefficients will cancel out.

Step 3: Add the new equations and make sure that one variable is gone.

Step 4: Substitute back in to find the remaining variable.

$$7(0) - 3y = 6 \quad -2(0) + 5y = -10$$

$$-3y = 6$$

$$5y = -10$$

$$-2 = y$$

$$y = -2$$