

# 6.3 Solving Systems by Elimination

## Solving a System by Adding Equations

What is the solution of the system? Use elimination.

$$\begin{aligned} 2x + 5y &= 17 \\ 6x - 5y &= -9 \end{aligned}$$

<b>Step 1:</b> _____	<b>Step 2:</b> _____
<b>Step 3:</b> Write your solution as a solution set.	

What is the solution of each system? Use elimination.

a) 
$$\begin{aligned} 5x - 6y &= -32 \\ 3x + 6y &= 48 \end{aligned}$$

b) 
$$\begin{aligned} -3x - 3y &= 9 \\ 3x - 4y &= 5 \end{aligned}$$

## Solving a System by Multiplying One Equation

What is the solution of the system? Use elimination.

$$\begin{aligned} -2x + 15y &= -32 \\ 7x - 5y &= 17 \end{aligned}$$

<b>Step 1:</b> _____ one equation to _____ one variable	<b>Step 2:</b> Solve for the _____ variable. Use _____ of the original equations.
<b>Step 3:</b> Write your solution as a _____.	

What is the solution of the system? Use elimination.

$$\begin{aligned} -5x - 2y &= 4 \\ 3x + 6y &= 6 \end{aligned}$$

**Solving a System by Multiplying Both Equations**

What is the solution of the system? Use elimination.

$$\begin{aligned} 3x + 2y &= 1 \\ 4x + 3y &= -2 \end{aligned}$$

<b>Step 1:</b> Multiply _____ so you can eliminate _____.	<b>Step 2:</b> _____ for the eliminated variable. Use either of the _____.
<b>Step 3:</b> _____ as a solution set.	

What is the solution of the system? Use elimination.

$$\begin{aligned} 4x + 3y &= -19 \\ 3x - 2y &= -10 \end{aligned}$$

**Finding the Number of Solutions**

How many solutions does the system have? Use elimination.

$$\begin{aligned} 2x + 6y &= 18 \\ x + 3y &= 9 \end{aligned}$$

How many solutions does the system have? Use elimination.

$$\begin{aligned} -2x + 5y &= 7 \\ -2x + 5y &= 12 \end{aligned}$$