

Algebra 1: 6.1 Warm Up
Solving by Substitution

Name _____ Period _____

1. Which equation would you rather solve for x ?

$$\begin{aligned}x + 4y &= 12 \\ -3x + y &= 10\end{aligned}$$

2. Solve each equation for x .

$$\begin{aligned}x + 4y &= 12 \\ -3x + y &= 10\end{aligned}$$

3. Which equation would you rather solve for y ?

$$\begin{aligned}x + 4y &= 12 \\ -3x + y &= 10\end{aligned}$$

4. Solve each equation for y .

$$\begin{aligned}x + 4y &= 12 \\ -3x + y &= 10\end{aligned}$$

ANSWER KEY

Warm Up

1. Which equation would you rather solve for x ?

$$x + 4y = 12$$

$$-3x + y = 10$$

I would rather solve the first equation for x .

2. Solve each equation for x .

$$x + 4y = 12$$

$$-3x + y = 10$$

$$x + 4y = 12$$

$$x + 4y - 4y = 12 - 4y$$

$$x = 12 - 4y$$

$$-3x + y = 10$$

$$-3x + y - y = 10 - y$$

$$-3x = 10 - y$$

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

$$x = \frac{10}{-3} + \frac{y}{3}$$

3. Which equation would you rather solve for y ?

$$x + 4y = 12$$

$$-3x + y = 10$$

I would rather solve the second equation for y .

4. Solve each equation for y .

$$x + 4y = 12$$

$$-3x + y = 10$$

$$x + 4y = 12$$

$$x - x + 4y = 12 - x$$

$$4y = 12 - x$$

$$4y + 4 = (12 - x) + 4$$

$$y = \frac{12}{4} - \frac{x}{4}$$

$$y = 3 - \frac{1}{4}x$$

$$-3x + y = 10$$

$$-3x + 3x + y = 10 + 3x$$

$$y = 10 + 3x$$