Solving Systems By Substitution

Steps:

1. Solve one equation for one variable (choose an easy one!)
2. Substitute the equation from #1 into the other equation
3. Solve the new equation
4. Substitute your answer to find the other variable

EXAMPLES

$x + 2y = 8$ $\quad$ $y = 2x - 1$

No need to solve, y is by itself!

Substitute!

$$x + 2y = 8$$

$$x + 2(\_\_\_\_\_) = 8$$

$$x + \_\_\_\_\_ = 8$$

$$\_\_\_\_\_ = 8$$

$$\_\_\_\_\_ = \_\_\_\_$$

$$x = \_\_\_\_$$

Substitute into either equation!

$$y = 2x - 1$$

$$y = 2(\_\_\_\_) - 1$$

$$y = \_\_\_\_ - 1$$

$$y = \_\_\_\_$$

Solution:

$y - 2x = -17$ $\quad$ $x + y = 16$

Solve one equation for x or y!

$$x + y = 16$$

$$x =$$

Substitute!

$$y - 2x = -17$$

$$y - 2(\_\_\_\_\_) = -17$$

$$y - \_\_\_\_\_ = -17$$

$$\_\_\_\_\_ = -17$$

$$\_\_\_\_\_ = \_\_\_\_$$

$$y = \_\_\_\_$$

Substitute into either equation!

$$x + y = 16$$

$$x + \_\_\_\_ = 16$$

$$x = \_\_\_\_$$

Solution: