

EQ: How can you solve an equation where there are more than one variable?

Questions:

How do you solve this?
($2x + 2y = 100$)

Notes:

1) $2x + 2y = 100$
2) $5x - 3y = 10$ } I can now solve for x and y

How do you solve system by equations step by step?

Systems of Equations steps to solve
1) pick one of the equations (does not matter)
pick #1

$$2x + 2y = 100$$

2) Solve for one variable in the equation (ex: x or y) does not matter
Ex: Solve for y (get y by itself)

Do you have to do a certain variable first?

$$\cancel{2x} + 2y = 100$$

$$-2x \qquad -2x$$

$$2y = 100 - 2x$$

$$y = 50 - x \leftarrow \text{solution}$$

3) Take your solution and substitute then answer into the other equation

$$5x - 3y = 10$$

$$5x - 3(50 - x) = 10$$

$$5x - 150 + 3x = 10$$

$$8x - 150 = 10$$

$$+150 \quad +150$$

$$8x = 160$$

$$\frac{8x}{8} = \frac{160}{8}$$

$$x = 20$$