

System of Equations (continued)

EQ: How do I start the elimination method?

How

$$1) -x + y = -3$$

Step 1: Make -x and

can I

$$2) 2x + y = 12$$

2x cancel out

Simplify

→ multiply the first

this equation

equation by 2

to make

→ multiply the

it easier?

WHOLE equation

What do

$$1) -2x + 2y = -6$$

Step 2: Now -2x and

I do once

$$2) +2x + y = 12$$

+2x cancel out

the equation

$$1) 2y = -6$$

Step 3: Add down

is canceled?

$$2) y = 12$$

the rows (2y + y) and

$$\begin{array}{r} \downarrow \quad \downarrow \\ 2y = -6 \\ y = 12 \end{array}$$

(-6 + 12)

$$\frac{3y}{3} = \frac{6}{3}$$

Step 4: Do a simple
one step equation

$$\boxed{y = 2}$$

(get y by itself)

How do I

find x?

$$2x + y = 12$$

Step 5: Plug in y for

$$2x + 2 = 12$$

one of the equations

to find x

Step 6: Solve the

equation to find x

$$\begin{array}{r} 2x + 2 = 12 \\ -2 \quad -2 \\ \hline 2x = 10 \end{array}$$

$$\frac{2x}{2} = \frac{10}{2}$$

$$\boxed{x = 5}$$

$$\boxed{x = 5, y = 2}$$

$$\boxed{(5, 2)}$$

Summary: Make some parts of the equation cancel out. To simplify the equation.