

How do I solve this system by substitution?

$$-8x - 6y = 8$$

$$y = 8x - 20$$

First, you need to substitute the entire "y" value of the 2<sup>nd</sup> equation in place of the "y" in the 1<sup>st</sup> equation to solve for "x".

Ok. Like this?

$$-8x - 6(8x - 20) = 8$$

$$-8x - 48x + 120 = 8$$

$$-56x + 120 = 8$$

$$\underline{-120}$$

$$\frac{-56x}{-56} = \frac{-112}{-56}$$

$$\frac{-56x}{-56} = \frac{-112}{-56}$$

$$x = 2$$

Yep! Just like that.

Ok. Now what do I do?

Take that "x" value and substitute it in place of the "x" in the 2<sup>nd</sup> equation to find the "y" value.

Ok. Like this?

$$y = 8x - 20$$

$$y = 8(2) - 20$$

$$y = 16 - 20$$

$$y = -4$$

Yep! Just like that. Now write your answer as a set of ordered pairs

(2, -4) Cool! Thanks!

No Problem!