**Solving Linear Systems by Substitution**

Yesterday we solved linear systems by graphing. But graphing only works *well* in certain situations. What if the two lines don’t meet at a perfect point? It makes life very difficult for us. That’s why we have other methods of solving linear systems.

Today we’re going to learn how to solve a system of linear equations using substitution. Let’s look at an example:



Instead of graphing we’re going to *substitute* one equation into the other.

*Step 1:* Look for an equation where one of the variables is by itself. (This happens in the second equation where y is all by itself.)

*Step 2:* Plug in what y equals from the bottom equation into the “y” part of the first equation. The top equation would then look like this, 

*Step 3:* Solve for the only variable left in the equation. (In this case, solve for x.)

*Step 4:* Plug your solution into either equation to solve for the other variable.

Your answer will be an (x, y) coordinate. (Just like yesterday.) Come show me your answer so I know you’re on the right track!

What if we had this problem?



Remember the first step is to get an equation where a variable is by itself. Notice this does NOT happen in this example.

Therefore before you do anything you have to FIRST manipulate one of the equations so that you get a variable all by itself. (Bottom one looks easier.)

Then you would solve it using the same series of steps as above.

**Assignment:** Practice B WS + pg 394 #1-17 odd