Lesson 5-2 Solving systems using substitution

Today we will learn:

How to solve systems of linear equations algebraically (using substitution). Math Practice # 1 Persevere in problem solving Math Practice # 1 Persevere in problem solving



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Solving Linear Systems Using Substitution

Methods for solving systems

- 1.
- 2. WATCH VIDEO, FILL IN NOTES

DEFINITION: replacing one variable with an equivalent expression that contains the other variable, so that we can get a one-variable expression to solve.

Steps:

1<sup>st</sup> – If needed, solve one of the equations for a variable (x or y).

 $2^{\text{nd}}$  – Substitute it into the other equation in place of the corresponding variable.

 $3^{\text{rd}}$  – Solve the equation for the remaining variable.

4<sup>th</sup> –Replace your answer into one of the equation and solve for the remaining variable.

Ex 1: y= 5x -2 (Since both equations are solved for y, you can skip step 1)

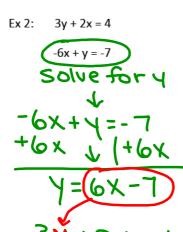
$$y = 2x - 11$$

$$2x - 11 = 5x - 2$$
 Solve for x

$$y = 5x - 2$$

$$y = 2x - 11$$

WATCH VIDEO, FILL IN NOTES



Steps:

If it's easy to do, Solve both Variable.

1st - If needed, solve one of the equations for a variable (x or y).

2<sup>nd</sup> – Substitute it into the other equation in place of the corresponding variable.

3<sup>rd</sup> – Solve the equation for the remaining variable.

4<sup>th</sup> –Replace your answer into one of the equation and solve for the remaining variable.

$$3\sqrt{+2}x = 4$$
  
 $3(6x-7)+2x=4$  solve for  $x$ .

$$\begin{array}{r}
 20x - 21 = 4 \\
 \hline
 \hline
 \hline
 \hline
 20x = 25 \\
 \hline
 20 \hline
 \hline$$

find y:  

$$3y + 2x = 4$$
  
 $3y + 2(1.25) = 4$   
 $3y + 2.5 = 4$   
 $1 - 2.5 = 2.5$   
 $3y = 1.5$   
 $3y = 1.5$ 

check in 
$$-6x+y=-7$$
  $-6(1.25)+0.5\stackrel{?}{=}-7$   $-7.5+0.5=-7$ 

Solution (1.25,0.5)



**VIDEO**