MFM2PI – *Unit 3: Linear Systems – Lesson 3*  Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Solving Linear Systems by Substitution – Day 1**

1. **Recall: Solving Linear Systems by Graphing**

Yesterday, we “solved” a linear system by graphing it and locating the shared point (or point of intersection).

*Quick Review Example: Solve the following system of linear relations graphically. Be sure to state the solution.*

* *



1. **Solving a Linear System by Substitution**

Solving a linear system by ***substitution*** is an ***algebraic method***.  
This means that we will be *manipulating the equations* to find the solution rather than graphing the linear relations.

Let’s learn the process during a worked example.

1. ***Examine*** the two linear relations. * *  
   *Question! Is there one of them that has an  
   isolated single variable on one side?  
   If “No!” – go to Step 2!  
   If “Yes!” – label that equation ① and go to Step 3!*
2. ***Rearrange*** one of the linear relations so that  
   there is an isolated single variable on one side.  
   *Label that equation ① and go to Step 3!*
3. ***Label*** the other equation ② and ***locate*** the same  
   isolated variable from the first equation in the second.
4. ***Substitute*** that variable in ② with the equivalent   
   expression for the variable from ①.
5. ***Solve*** for the variable.
6. ***Substitute*** the variable you found into either ① or ②  
   and ***solve*** for the second variable.
7. ***Write*** a concluding statement.

1. **Practice Makes Perfect!**

*Solve the following linear systems by substitution. Be sure to state your solution.*

1. **  
   **
2. **  
   **
3. *  
   *
4. **

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**HW: *Worksheet – “Unit 3 Lesson 3”***