Algebra 1 Name _____
4-2 LinSys: Substitution Date _____

Goal:

Warm Up: If you were asked to solve the system by graphing, explain why it might not be the most simple option: $\begin{cases} y = 6x + 7 \\ 3x - 8y = 4 \end{cases}$

Directions: Solve the system of linear equations by substitution.		
Linear System	**Example 1** $y = 6x + 7$ $3x - 8y = 4$	**Try It!** $x = y + 6$ $x + y = 10$
1. Solve for a variable from one equation		
2. Substitute expression from (1) into other equation; Solve for other variable		
3. Substitute value from (2) into equation from (1); solve for second variable		
4. Solution/Check	**Solution: (,)**	**Solution: (,)**

Example 2: Solve the system of linear equations by substitution.

$x - 2y = -13$
$2x + y = -6$

Try It! Solve the system of linear equations by substitution.

$3x + 2y = 8$
$x + 4y = -4$

Example 3: Systems with infinitely many solutions or no solution.

a. $y = 3x + 1$
$6x - 2y = -2$

b. $5x - y = -4$
$y = 5x - 4$

Try It! Determine the number of solutions of each system.

a. $x + y = -4$
$y = -x + 5$

b. $y = -2x + 5$
$2x + y = 5$

Example 4:
In one day the National Civil Rights Museum in Memphis, TN, admitted 321 adults and children and collected $1590. The price of admission is $6 for adults and $4 for children. How many adults and how many children were admitted to the museum that day?

Unit 1: What do you know? Equation 1:	Unit 2: What do you know? Equation 2:
Solve:	
There were ____ adult tickets and ____ children tickets sold	Check:

Try It!
You are selling tickets for a high school play. Student tickets cost $4 and general admission tickets cost $6. You sell 525 tickets and collect $2876. How many of each type of ticket were sold?

Unit 1: What do you know? Equation 1:	Unit 2: What do you know? Equation 2:
Solve:	
There were ____ general tickets and ____ children tickets sold	Check: