

Name: \_\_\_\_\_

Period: \_\_\_\_\_

### Notes #4 – Systems using Substitution

#### Warm-Up:

Solve this system of equations algebraically.

a. 
$$\begin{cases} y = -2x - 7 \\ y = 2x + 17 \end{cases}$$

b. 
$$\begin{cases} x = -4y + 1 \\ x = y - 4 \end{cases}$$

#### Substitution Method:

The substitution method is another method for solving systems of equations.

1. 
$$\begin{cases} y = x - 2 \\ 2x + 2y = 4 \end{cases}$$

2. 
$$\begin{cases} x = -4y - 4 \\ 3x + 5y = 2 \end{cases}$$

**Try It!**

a. 
$$\begin{cases} y = -2x - 1 \\ x - 2y = 12 \end{cases}$$

b. 
$$\begin{cases} -3x - 7y = 1 \\ y = -2x + 3 \end{cases}$$

**Special Cases**

3. 
$$\begin{cases} y = -3x + 4 \\ 6x + 2y = 7 \end{cases}$$

4. 
$$\begin{cases} y = 3x - 6 \\ -3x + y = -6 \end{cases}$$

**Try It!**

**Solve the following system:**

$$\begin{cases} y = 2x - 5 \\ -2x + y = 7 \end{cases}$$

**Practice: Solve the following systems.**

1. 
$$\begin{cases} 3x - y = 30 \\ y = -x + 14 \end{cases}$$

2. 
$$\begin{cases} x = -6y + 15 \\ -x + 4y = 5 \end{cases}$$

3. 
$$\begin{cases} y = \frac{1}{2}x + 2 \\ x - 2y = -4 \end{cases}$$