3.4 Substitution Method

Algebra 1 Name: _____ **CA #2**

Create a system of equations for each problem, but don't solve. Identify each variable's meaning.

1. The perimeter of a rectangular field is 628 meters. The length of the field exceeds its width by 6 meters.

_____ = _____
(variable) (what the variable represents)

_____ = _____
(variable) (what the variable represents)

Equation 1: _____

Equation 2: _____

2. A plane traveled 644 miles to Jacksonville. The trip there was with the wind and it took 7 hours to get there. The trip back was into the wind and it took 14 hours.

_____ = _____
(variable) (what the variable represents)

_____ = _____
(variable) (what the variable represents)

Equation 1: _____

Equation 2: _____

Solve each system of equations using substitution.

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

4. $\begin{cases} 2x - 3y = -10 \\ x - y = -3 \end{cases}$

5. $\begin{cases} -x + y = -4 \\ 2x + 3y = -12 \end{cases}$

6. $\begin{cases} 8x + 2y = -3 \\ 4x + y = -4 \end{cases}$

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

8. $\begin{cases} -3x + y = 5 \\ 2x - 3y = -1 \end{cases}$

9. $\begin{cases} 4x - y = -10 \\ 6x + 2y = -1 \end{cases}$

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

Answers to 3.4 CA #2

1. l = length of the field w = width of the field $2l + 2w = 628$ $l = w + 6$	2. p = speed of the plane w = speed of the wind $644 = (p + w)7$ $644 = (p - w)14$	3. $(0, -1)$	4. $(1, 4)$	5. $(0, -4)$
6. No Solution	7. Infinite Solutions	8. $(-2, -1)$	9. $\left(-\frac{3}{2}, 4\right)$	10. $(0,3)$