3.4 Substitution Method

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

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

1. Mr. Brust likes to reward his students so he purchased 2 kinds of candy for a math game. He can't remember how many of each he purchased, but he does remember that the Chocolate Smoothies cost $0.50 each and the Super Pops cost $0.60 each. He purchased a total of 30 pieces of candy for $16.80.

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

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

Equation 1: _____

Equation 2: _____

2. A boat traveled 264 miles downstream. The trip downstream took 11 hours and the trip back took 66 hours.

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

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

Equation 1: _____

Equation 2: _____

Solve each system of equations using substitution.

3. $\begin{cases} -3x + y = 9 \\ 9x - 3y = -27 \end{cases}$

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

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

6. $\begin{cases} x + 4y = 1 \\ 3x + 2y = -12 \end{cases}$

7. $\begin{cases} x - 2y = 7 \\ 3x + 4y = 1 \end{cases}$

8. $\begin{cases} -x - y = 2 \\ 2x + y = 0 \end{cases}$

9. $\begin{cases} x - 3y = -6 \\ -3x + 9y = 4 \end{cases}$

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

Answers to 3.4 CA #1

1. $s =$ # of Smoothies $p =$ # of Pops $s + p = 30$ $0.5s + 0.6p = 16.80$	2. $b =$ speed of the boat $r =$ speed of the river $264 = (b + r)11$ $264 = (b - r)66$	3. Infinite Solutions	4. $(-2, -1)$	5. $(0, 2)$
6. $\left(-5, \frac{3}{2}\right)$	7. $(3, -2)$	8. $(2, -4)$	9. No Solution	10. $(4, 0)$