Solving a System by Substitution

Name _____

Date _____ Period _____

Three outcomes when solving systems by substitution

$x = 2$ $y = -3$	$5 = 5$ True Statement	$5 \neq 19$ False Statement

Solve the system of equations:

1. Look for the easiest variable to solve for and solve.
2. Substitute value into other equation.
3. Solve for first variable.
4. Insert value into either equation, solve for second variable.

$4x - 4 = 2y$ $3x - 2y = 11$

Solve the system of equations:

1. Look for the easiest variable to solve for and solve.
2. Substitute value into other equation.
3. Solve for first variable.
4. Insert value into either equation, solve for second variable.

$y = -x + 1$ $y = x^2 - 1$

Solve the system of equations:

1. Look for the easiest variable to solve for and solve.
2. Substitute value into other equation.
3. Solve for first variable.
4. Insert value into either equation, solve for second variable.

$2x + y = 8$ $6x + 3y = -15$

Solve the system of equations:

1. Look for the easiest variable to solve for and solve.
2. Substitute value into other equation.
3. Solve for first variable.
4. Insert value into either equation, solve for second variable.

$2x - 4y = 10$ $\quad$ $x = 2y + 5$

Solve the system of equations

1. Look for the easiest variable to solve for and solve.
2. Substitute value into other equation.
3. Solve for first variable.
4. Insert value into either equation, solve for second variable.

$x = 2$

$y = -3$

(x,y) Solution(s)
System is consistent
Equations are independent

$5 = 5$

True Statement

Infinitely Many Solutions
System is consistent
Equations are dependent

$5 \neq 19$

False Statement

No Solutions
System is inconsistent