

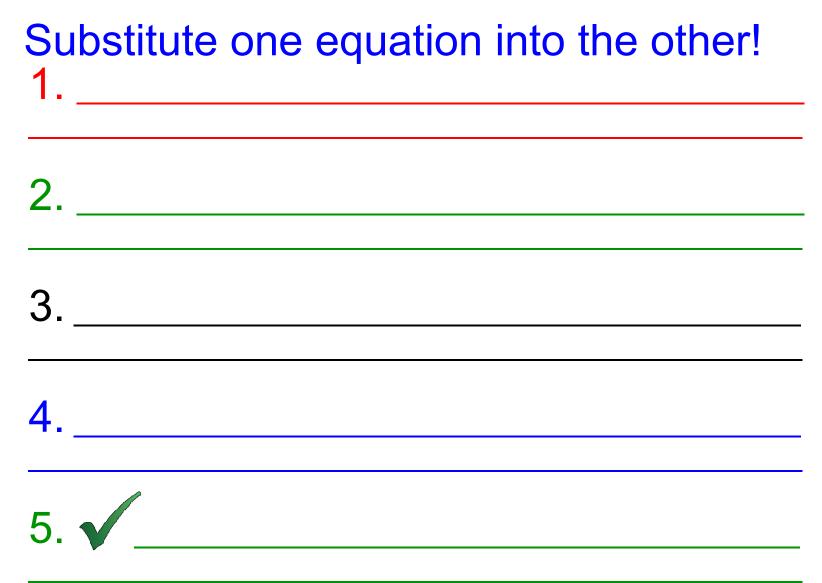
## Systems of Equations: Substitution Today's Learning Targets:

6.4 - I can use substitution to solve simple systems of linear equations.

## Evaluate. 3x - 12 when x = -2

$$-12(y - 4) + 2 when y = -1$$

$$7 - (x + 9)$$
 when x = 6



y = x + 2y = 2x - 5

$$x = y - 1$$
$$x + 2y = 8$$

$$y = x - 1$$
$$2x - y = 0$$

## Weird stuff...

$$x = -3y + 4$$
  
$$6y + 2x = 8$$

2y - 8x = 124x - 9 = y

★ 3y + 4x = 14-2x + y = -3

- 1 Solution:
- x = 3, y = 0 (3, 0)
- Solution works in both equations.

No Solution:

- 3 ≠ 4
- **no** (x, y) that make both equations true.
- Write "no solution" or the symbol  $\not O$ .
- Parallel Lines!

Infinitely Many Solutions:

- 5 = 5 or x = x
- Any ordered pair that works in 1 equation will work in the other.
- Write "Inf. Many Sol." or the symbol .
- Same Line!

Substitute one equation into the other!

- 1. I.D. one variable that is by itself \*circle the other side.
- 2. Send in substitute for x (or y) \*put circled part into other equation for lone variable.
- 3. There should only be one variable now \*solve for the variable that's left
- 4. Plug answer into an equation.
  - \*find the other variable
- 5. **V** the solution in **both** equations