

## Notes on Basic Equations

1) Addition and subtraction are inverses.

2) Multiplication and division are inverses.

**\*\*Inverses “undo” each other!\*\***

3) An expression has no “=” in the given problem.

Example:  $2x + 6y - 5$

4) An equation has two expressions with an “=” between them.

Example:  $3x - 4 = 7$

5) When simplifying an expression, we use PEMDAS.

6) When solving for a variable, we use PEMDAS backwards because we are “unraveling” the equation.

### Process for solving for a variable:

1) Simplify everything completely and individually on each side of the “=” before starting to move things back and forth.

2) Once you’ve simplified both sides completely, you may begin moving numbers back and forth.

3) Move the variable with the smallest coefficient first. This way, you will end up with a variable having a positive coefficient and are less likely to lose a negative sign somewhere.

4) Use addition or subtraction to move any numbers to the other side of the equation from the variable.

5) Multiply or divide, as needed, both sides of your equation by the coefficient of the variable.