Guide to Solving Equations/Inequalities

Goal for solving equations -> **Get the variable by itself (x = #)**

Golden Rule – > **Whatever you do on 1 side, do the same to the other (Show work both sides)**

STEPS

1. Write out original equation (Recall: = sign divides eqn into 2 sides)
2. Is there any subtraction?

No – skip to step 3. Yes -> **Add a line, change the sign**

3. Do you need to distribute (is there a # being multiplied to parenthesis)?

No – skip to step 4. Yes -> **Multiply # outside Parenthesis to EVERY Term inside the Parenthesis**

4. Are there any like terms on each side of equal sign?

No - skip to step 5. **Yes -> Simplify by adding them together**

5. Are there variable terms on both sides?

No - skip to step 6. Yes -> **Add opposite of 1 variable terms to BOTH sides so it cancels out on 1 side**

6. Is there a constant being added to or subtracted from the variable term?

No - skip to step 7. Yes -> **ADD OPPOSITE TO BOTH SIDES**

7. Is there a number being multiplied or divided to variable?

Yes -> *** Undo mult -> divide (or mult by recip) on BOTH SIDES**
*** Undo division -> mult on BOTH SIDES**

No – skip to step 8. If an inequality are you mult/div by a neg?

No – **Keep Ineq. sign same** Yes – **FLIP Ineq. sign**

8. Check solution by substituting it in for variable. Are the 2-sides equal?

No – **Answer is incorrect. Go back to step 1 & re-do the problem.** YES!! – **Correctly solved the problem.**