BASIC STEPS & EXAMPLES FOR: SOLVING INEQUALITIES

***Steps are the same as equations, it is just the inequality that will change if the coefficient is negative

Reminder On Coefficient & Variable

7 X   7 IS THE COEFFICIENT
       X IS THE VARIABLE

INEQUALITIES: >   Greater than   <   Less than
                ≥   Greater than OR Equal to   ≤   Less than OR Equal to

Step 1: If you have like terms on the same side then combine them, otherwise go to step 2.

Step 2: You must isolate the variable by itself. You do this by putting variables on one side and numbers on the other.
Do the inverse operation (the opposite operation) to get rid of a number. What you do to one side you must do to the other.

Step 3: Once the variables are on one side and the numbers are on the other, then you do the inverse operation for the coefficient.

Step 4: IF THE COEFFICIENT IS NEGATIVE, SWITCH THE INEQUALITY THE OTHER WAY!!!!!

> TO <   < TO >   ≥ TO ≤   ≤ TO ≥

NOTE: The Equal/Inequality signs separate one side from another.

ONE SIDE ≥ OTHER SIDE   EXAMPLE 1

3x	+ 7	≥	34	
	- 7		-7	**Step 2** It shows that we are adding 7, SO we subtract 7 from both sides
$\dfrac{3x}{3}$		≥	$\dfrac{27}{3}$	**Step 3** The variable is multiplied by 3, SO divide both sides by 3
⬇			⬇	
x		≥	9	**ANSWER** Bring down the results

ONE SIDE > OTHER SIDE   EXAMPLE 2

-4x	- 12	>	36	
	+ 12	+	12	**Step 2** It shows that we are subtracting 12, SO we add 12 to both sides
$\dfrac{-4x}{4}$		>	$\dfrac{48}{4}$	**Step 3** The variable is multiplied by -4, SO divide both sides by -4
⬇			⬇	The coefficient was negative, SO
x		<	12	**ANSWER** We switched the sign to the opposite