***Absolute Value Equations***

 This is the symbol for absolute value. Whatever number you put in there will always become positive. Therefore when you see this you should be thinking that the number inside could be negative OR positive.

This means that when we solve absolute value equations there will be 2 solutions!

Example #1

Whenever we solve absolute value equations, we need to ask ourselves, “Is the absolute value part by itself?” If the answer is NO, then you need to simplify the equation down until the absolute value part is by itself. If the answer to this question is YES, then we can continue with the steps below.

 We need to break this down into 2 different equations, a positive part and a negative part.

x + 7 = 13 and x + 7 = -13

Now we would solve both of these individually to come up with our two different answers. Go ahead and solve each of these below. Show your steps and work.

x = \_\_\_\_\_ and x = \_\_\_\_\_\_

Hopefully you got x = 6 and x = -20. If not raise your hand and get some help.

Example #2



Is the absolute value part by itself? \_\_\_\_\_\_\_\_\_\_\_\_

Then the first thing we have to do is get the absolute value part by itself. So you need to first divide both sides by 6. What do you get when you’re done?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now you break it up into two different equations, one negative and one positive.

Solve the two equations below. Show your work on the next page.

x = \_\_\_\_\_ and x = \_\_\_\_\_

Example #3:



Now before you start solving this lets think about it first. The answer to an absolute value equation can only be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (If you’re stuck look at the second sentence on the first page.)

Well if an absolute value function can only ever be positive will we ever be able to get -2?

NO!!

Therefore the answer to this particular problem is NO SOLUTION.

*Do Problems:* Pg 110 #14-28 evens (Solving for a Variable)

Pg 150 # 2-24 evens (Absolute Values)