Name:_____ Date:_____

Notes
Algebra Section 6.1
Pages 356-361

Goal: "You will solve inequalities using addition and subtraction"

$x \geq 5$ means that x can be: greater than or equal to 5.

$x < -1$ means that x can be less than -1. x CANNOT be -1 !

To Graph a Number on a number line:

1. Start with the number on the number line.

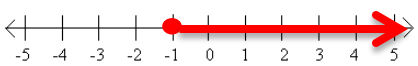
2. Place a closed (filled in) circle if $\leq$ or $\geq$. This means that the number is included in the solution. Place an open (not filled in) circle if $<$ or $>$. This means that the number is not included in the solution.

3. Draw an arrow pointing to all of the other solutions.

Graph the following inequalities on a number line:

Ex: Graph $x < 3$.

Ex: Graph $x \geq -1$



Ex: Graph $5 \geq x$ (if you read this starting with x, it would say that x is less than or equal to 5)

Solving inequalities using addition and subtraction:

1. Solve like a normal equation (use inverse operations)

2. Graph the solution on a number line.

Ex: $x - 5 > -3.5$

$+5 \quad +5$

$x > 1.5$

Solve and graph solution on a number line:

Ex: $x - 9 \leq 3$

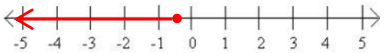
$x \leq 12$

Ex: $p - 9.2 < 5$

$p < 14.2$

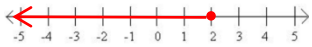
Ex: $-1 \geq m - \frac{1}{2}$

$-½ \geq m$



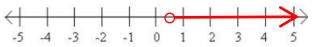
Ex: $9 \geq x + 7$

$2 \geq x$



Ex: $y + 5.5 > 6$

$y > 0.5$



Ex: You are checking a bag at an airport. Bags can weigh no more than 50 pounds. Your bag weighs 16.8 pounds. Find the possible weights w (in pounds) that you can add to the bag.

$16.8 + x \leq 50$

$x \leq 33.2$

33.2 pounds or less