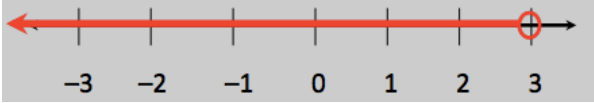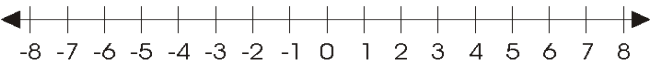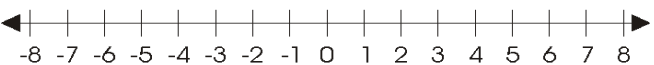Name: _____   Date: _____

Inequalities Guided Notes

Graphing Inequalities

- An _____ states that two quantities either are not equal or may not be equal. An inequality uses one of the following symbols:

Symbol	Meaning	Word Phrase	Graph	Example
<	_____ than	_____ than, below		
>	_____ than	_____ than, above		a > 5
≤	Less than or _____ to	At _____, no more than		
≥	Greater than or _____ to	At _____, no less than		a ≥ −4

- An inequality that contains a variable is an _____ _____.
- An inequality may have more than one solution. Together, all of the solutions are called the _____ _____.
- You can graph the solutions of an inequality on a _____ _____.
- If the variable is "_____than" or "_____ than" a number, then that number is indicated with an _____circle.
- If the variable is "greater than or _____to" or "less than or _____ to" a number, then that number is indicated with a _____ circle.

Adding and Subtracting Inequalities

- When you _____or _____ the same number on both sides of an inequality, the resulting statement will still be true.
- You can find solution sets of _____ the same way you find solutions of _____, by isolating the _____.

Example	*Solve*	*Graph*	*Check*
A. $n - 7 \leq 15$			
B. $a + -10 \geq -3$			

- You can see if the _____to an inequality is true by choosing any number in the solution set and _____ it into the _____ inequality.

Multiplying and Dividing Inequalities
- When you _____ or _____ both sides of an inequality by the same _____ number, the statement will still be _____.
- When you _____ or _____ both sides by the same _____ number, you need to _____ the direction of the inequality symbol for the statement to be true.

Example	*Solve*	*Graph*	*Check*
C. $\dfrac{c}{4} \le -4$			
D. $-7b < 56$			

Solving Two-Step and Multi-Step Inequalities
- When you solve two-step and multi-step_____, you can use the order of operations in _____ to isolate the _____.
- You can use the same process when solving two-step and multi-step _____.

Example	*Solve*	*Graph*	*Check*
E. $\dfrac{y}{2} - 6 > 1$			
F. $-9x + 4 \le 31$			
G. $3(w + 7) < -5w - 3$			