

### 4-4B & 4-4C Solving One-Step Inequalities

**Equations** – have an equal sign AND one solution.

**Inequalities** – have an inequality sign (<, >, ≤, or ≥) AND a solution set.

**Solution Set** – the set of all values of the variable that make the inequality true.

- Inequality signs:
1. < \_\_\_\_\_ points left
  2. > \_\_\_\_\_ points right
  3. ≤ \_\_\_\_\_
  4. ≥ \_\_\_\_\_
  5. ≠ \_\_\_\_\_

**To Solve Inequalities:**

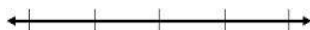
1. Use INVERSE OPERATIONS to ISOLATE THE VARIABLE (same as equations.)
2. **When multiplying or dividing BOTH sides of the inequality by a NEGATIVE number – FLIP the inequality SIGN!!!**

**Graphing: (must have the variable on the left to graph!)**

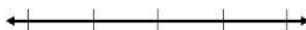
1. Draw a number line including arrows with five values with the solution in the middle.
2. Use open circle for < or > or a closed circle for ≤ or ≥.
3. SHADE in the solution set (including the arrow): Left for Less than, and Right for greater than

**Ex. 1:** Solve and graph each inequality.

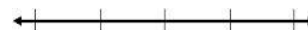
**A.**  $y - 9 < 11$



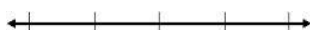
**B.**  $-7 \leq n + 9$



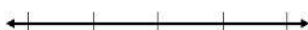
**C.**  $-21 + a \geq -15$



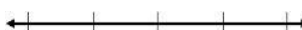
**D.**  $5x > 30$



**E.**  $\frac{n}{4} \leq 3$



**F.**  $-4x \leq 4$



**G.**  $\frac{k}{-2} < 9$

