

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

Equations - have an equals sign AND one solution.

Inequalities - use an inequality sign (< or > or ≤ or ≥) AND a solution set.

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

- inequality signs
- 1. < less than (points left)
  - 2. > greater than (points right)
  - 3. ≤ less than or equal to
  - 4. ≥ greater than or equal to
  - 5. ≠ not equal to

$x > 4$  means  $x$  can be anything larger than 4 (4.1, 5, 21, 999, etc.)

To Solve Inequalities:

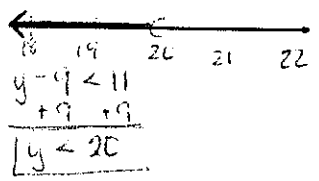
1. Use INVERSE OPERATIONS to ISOLATE THE VARIABLE (same as equations.)
2. When multiplying or dividing BOTH sides of the inequality by a NEGATIVE number - FLIP the inequality SIGN!!!

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

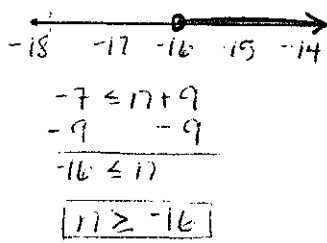
1. Draw a number line including arrows with five values with the solution in the middle.
2. Use open circle for < or > or a closed circle for ≤ or ≥.
3. SHADE in the solution set (including the arrow): Left for Less than, and Right for greater than

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

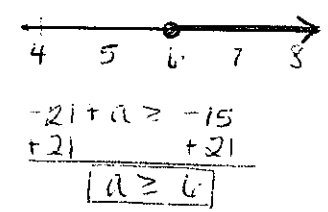
A.  $y - 9 < 11$



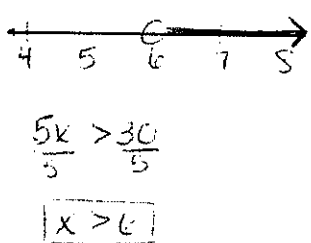
B.  $-7 \leq n + 9$



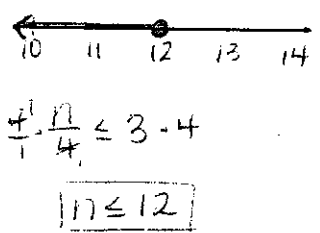
C.  $-21 + a \geq -15$



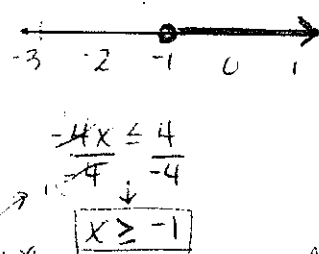
D.  $5x > 30$



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



F.  $-4x \leq 4$



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

