

Solving and Graphing Inequalities in One Variable

The Golden Rule of Inequalities

WHENEVER YOU MULTIPLY OR DIVIDE BOTH SIDES BY A NEGATIVE NUMBER YOU MUST FLIP THE INEQUALITY SIGN.

1. GET VARIABLE BY ITSELF ON ONE SIDE OF INEQUALITY SYMBOL.
2. CHECK THE ORDER: VARIABLE, SYMBOL, CONSTANT $x < \#$
3. CIRCLE THE CONSTANT ON THE NUMBER LINE
4. DECIDE OPEN CIRCLE OR CLOSED CIRCLE
5. SHADE APPROPRIATELY (LEFT OR RIGHT)

Open Circle

$<$ $>$
 \neq

Closed Circle

\leq \geq
 $=$

Example: Solve and Graph

$$\begin{array}{r} 5 - 3x \leq 13 + x \\ \underline{-x} \quad \underline{-x} \\ 5 - 4x \leq 13 \\ \underline{-5} \quad \underline{-5} \\ -4x \leq 8 \\ \underline{-4} \quad \underline{-4} \\ x \geq -2 \end{array}$$

APPLY GOLDEN RULE



INEQUALITIES

Number line graphs

$<$

less than



\leq

less than
or equal to



$>$

greater than



\geq

greater than
or equal to

