

Solving Absolute Value Inequalities

STEPS FOR SOLVING:

1. Isolate the absolute value expression
2. Write the problem in TWO CASES
 - Case 1: Keep it the same, just drop the $||$
 - Case 2: Switch the inequality symbol and switch the sign of the number of the right side of the inequality symbol
3. Solve both inequalities
4. Graph solutions on a number line

SWITCHING THE INEQUALITY SYMBOLS:

$<$ $\rightarrow$ $\underline{\hspace{1cm}}$

$>$ $\rightarrow$ $\underline{\hspace{1cm}}$

$\leq$ $\rightarrow$ $\underline{\hspace{1cm}}$

$\geq$ $\rightarrow$ $\underline{\hspace{1cm}}$

$<$ $>$ $\leq$ $\geq$

EXAMPLE 1:

$$|2x - 4| > 6$$

Case 1: $2x - 4 > 6$

x _____

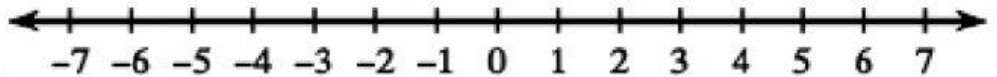
Case 2: $2x - 4 \leq -6$

x _____

Symbols Tool Kit:

$\leq$ $<$ $\geq$ $>$

● ○ $\leftarrow$ $\rightarrow$



EXAMPLE 2:

$$2|5x + 10| \leq 40$$

Case 1: _____

x _____

Case 2: _____

x _____

Symbols Tool Kit:

$\leq$ $<$ $\geq$ $>$

● ○ $\leftarrow$ $\rightarrow$

