

Solving and Graphing Absolute Value Inequalities Notes

Steps:

1. Isolate the $||$
2. Separate into two cases
3. Solve both cases
4. Graph both solutions on number line

Two Cases:

Case 1:
Keep it the same, drop the $||$

Case 2:
Drop the $||$
Switch the inequality
Switch the sign

Inverses Reminder:

Addition and Subtraction

Multiplication and Division

Example 1:

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

Case 1:

$$2x - 4 > 6$$

$$2x >$$

$$x >$$

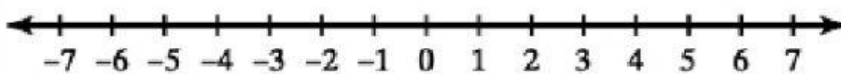
Case 2:

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

$$2x \leq$$

$$x \leq$$

Solution:



Graphing Tool Kit:



Example 2:

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

Case 1:

$$5x + 10 \leq$$

$$5x \leq$$

$$x \leq$$

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

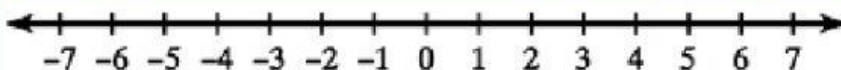
Case 2:

$$5x + 10 >$$

$$5x >$$

$$x >$$

Solution:



Graphing Tool Kit:

