INB Page 70: "6.4 – Absolute Value Inequalities"

Textbook pages: p. 353 – 358

Definition: the absolute value equation $|x| = 3$ means that the distance between x and 3 is equal to 3. The inequality $|x| < 3$ means any number with a distance from 0 *less than* 3 and $|x| > 3$ means any number with a distance from 0 *greater than* 3.

Solve:

- Isolate the absolute value
    - If the absolute value is > a negative number, there are INIFINITE solutions (all absolute value results are positive and all positives are greater than negatives)
    - If the absolute value is < a negative number, there are NO solutions (all absolute value results are positive and no positives will be less than negatives)
    - If the absolute value is > or < a positive number, split it into two separate inequalities to solve.
        - < will be an AND
        - > will be an OR
- Setup two separate inequalities
    - Inside absolute value is ***positive result***
    - Inside absolute value is ***negative result***
- Write final answer as compound inequality

Graph:

- See 6.3 Notes for graphing compound inequalities