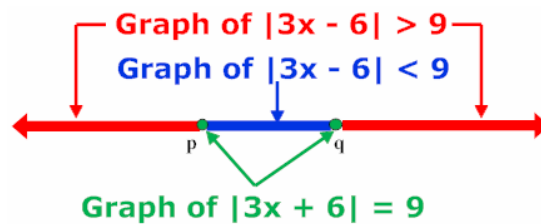


NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

Please **print** your name**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

- The graph of an equation is the **boundary** between the graph of the corresponding two inequalities.
- When considering equations of the type  $|ax + b| = k$ , the **Law of Trichotomy** dictates that we consider the three possibilities  $k < 0$ ,  $k = 0$ , and  $k > 0$ .
- If A is the solution set of  $|ax + b| < k$ , B is the solution set for  $|ax + b| = k$ , and C is the solution set for  $|ax + b| > k$ , then the union  $A \cup B \cup C = \mathbf{R}$
- If A is the solution set of  $|ax + b| < k$ , B is the solution set for  $|ax + b| = k$ , and C is the solution set for  $|ax + b| > k$ , then the intersection  $A \cap B = \emptyset$ .
- If A is the solution set of  $|ax + b| < k$ , B is the solution set for  $|ax + b| = k$ , and C is the solution set for  $|ax + b| > k$ , then the intersection  $A \cap B = \emptyset$ .
- Write  $|3x - 8| < 11$  in compact compound form.  $\mathbf{-11 < 3x - 8 < 11}$
- (3 pts) Complete the following graph by inserting one of  $|ax + b| < k$ ,  $|ax + b| = k$ , or  $|ax + b| > k$  in the blanks.



- Complete the definition of absolute value.  $|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$