

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

Please **print** your name

**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

**Blue comments are my reactions to mistakes I saw and don't want to see on the test on Monday.**

1. The boundary equation associated with the inequality  $|2x - 5| < 7$  is  **$|2x - 5| = 7$** .
2. The boundary equation associated with the inequality  $5x - 4y > 7$  is  **$5x - 4y = 7$** .
3. The boundary equation associated with the inequality  $x^2 - y^2 < 16$  is  **$x^2 - y^2 = 16$** .
4. The boundary equation associated with the inequality  $3x - 5 > 4$  is  **$3x - 5 = 4$** .

Note that in Questions 1 – 4, you are asked to provide an **E Q U A T I O N**. Therefore it must contain an = symbol. Your response cannot contain inequality symbols.

Given any inequality the corresponding **B O U N D A R Y E Q U A T I O N** is created by simply replacing the inequality symbol with the equality symbol.

5. The solution set for the inequality  $|3x + 8| < -3$  is  $\emptyset$ .

The absolute value cannot be negative. Therefore no value for x will make that absolute value true. The solution set is the null set  $\emptyset$

6. The solution set for a particular inequality  $|mx + b| < k$  is the interval (p, q), what is the solution set for the equation  $|mx + b| = k$ ? **{p, q}**.

The notation (p, q) means the interval from p to q on the number line which does not contain either endpoint p or q Or it means the point in the plane whose coordinates are p and q, in that order.

The notation [p, q] means the interval from p to q on the number line which does contain the endpoints p and q.

7. The inequality  $|3x - 7| < 4$  is equivalent to the compact compound inequality  **$-4 < 3x - 7 < 4$** .

**You simply M U S T know this.**

8. **T F** The graph of  $3x + 2y = 6$  is a line.

This is a linear equation in one variable, so its graph is a line.

9. **T F** The graph of  $|3x + 2| = 1$  is a line.

This is an equation in O N E variable, so the entire discussion takes place on the number line – graphs must be point or intervals or rays or the entire number line.

10. **T F** A solution for a linear equation in two variables is a number.

This is an equation in T W O variables, so the entire discussion takes place in the coordinate plane – graphs of linear equations in two variables are lines. Every point on the graph of an equation is a solution to that equation (see definition of graph). Points on a line in the plane are not numbers they are ordered pairs of numbers.

**There is absolutely nothing on this quiz that should prompt you to begin any writing in the hope of solving something.**

**Read the questions and think about them, then answer the question that was asked!**