

Name: _____ Section: _____

Problem 0. Solve the following inequality. (1 point)

$$|3x| < 9$$

Problem 1. Let $A(a, b)$ be a point on the Cartesian plane, and r a positive real number. If $B(x, y)$ is any point on the Cartesian plane such that the distance $d(A, B)$ is r , then what is the formula that describes the relation between $A(a, b)$ and $B(x, y)$? (Hint: you already know this formula.) (2 point)

Problem 2. Let C be the collection of all such points (x, y) in Problem 1. What does C look like? (2 point)

Problem 3. Now, let $a = 1$, $b = 2$, and $r = 3$. Graph C with the given values. (2 points)

Problem 4. Let \overline{C} be the collection of points $(-x, y)$, where (x, y) is a point in C . For example, if $(x, y) = (15, 2)$, then $(-x, y) = (-15, 2)$. Now, graph \overline{C} with the values of a , b , and r given in Problem 1. (3 points)