

Math 151**Quiz 1**

Justify all answers with neat and organized work. Clearly indicate your answers.
20 points possible.

1. (4 pts.) Solve the inequality in terms of intervals and illustrate the solution set on the real number line.

$$x^2 + 5x \geq -6$$

2. (4 pts.) Solve the inequality.

$$|7x - 3| \leq 6$$

3. (4 pts.) Consider the points $P(1, -2)$ and $Q(5, 3)$.

(a) Find the distance between P and Q .

(b) Find the slope of the line through P and Q .

4. (4 pts.) Show that the given equation represents a circle, and find its center and radius.

$$x^2 + y^2 + 8x - 14y + 10 = 0$$

5. (4 pts.) Complete the square to identify the type of curve and neatly sketch the graph.

$$x^2 + 9y^2 - 12x + 27 = 0$$