

Name: _____

1. (20 points) Find the center and radius of a circle with the following equation. Show all work.

$$x^2 + y^2 - 8x - 6y + 14 = 0$$

2. Let $A(2, -4)$ and $B(-8, -7)$ be the endpoints of the diameter of a circle. Show all work for each of the following.

(a) (3 points) Find the **center** of the circle.

(b) (3 points) Find the **radius** of the circle.

(c) (3 points) Find the **equation** of the circle.

3. Graph the equation $y = -x^3 - 3$ on the viewing rectangle $[-2, 3]$ by $[-5, 3]$.

(a) (3 points) Sketch the graph as you see it on the calculator.

(b) (2 points) Using your calculator, approximate the x-intercept to two decimal places.