

## Equations of a Circle

1. How does the equation of a circle change when you move point B? What specific variable is changing?
2. How does the equation of a circle change when you move point A? What specific variable(s) are changing?
3. How does the equation of a circle change when you move both points A and B? Again, what specific variables are changing?
4. Is there a difference in the equation if the center is on the origin as opposed to anywhere else on the coordinate plane? Give an example of an equation of a circle when the center is on the origin *and* one example of an equation of a circle when the center is not on the origin.

### Practice Problems Part 1

1.  $x^2 + y^2 = 49$       C: \_\_\_\_\_ r = \_\_\_\_\_

2.  $(x-4)^2 + (y-2)^2 = 121$       C: \_\_\_\_\_ r = \_\_\_\_\_

3.  $(x-5)^2 + y^2 = 64$       C: \_\_\_\_\_ r = \_\_\_\_\_

4.  $x^2 + (y+2)^2 = 12$       C: \_\_\_\_\_ r = \_\_\_\_\_

**Before continuing, use the diagram on page 3.2 (on the handheld TI Nspire) to check your answers for accuracy.**

5. Write the equation of a circle with the center (3, 4) and a radius of length 3.
6. Write the equation of a circle with the center (-4, 5) and a radius of length 4.
7. Write the equation of a circle with the center (7, 0) and a radius of length  $\frac{3}{4}$ .
8. Write the equation of a circle with the center (-3, -6) and a radius of length  $\sqrt{5}$ .

**Use the diagram on page 3.2 (on the handheld TI Nspire) to check your answers for accuracy.**

9. Can you and your partner come up the equation of a circle whose center is at the origin *and* the equation of a circle whose center is (h, k)?

**LET'S SHARE OUR FINDINGS/DISCOVERIES AS A WHOLE CLASS!!!!**