**Honors Math 3: Unit 6 Circle Worksheet Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_**

*Note: If r2 is not a perfect square then leave r in simplified radical form but use the decimal equivalent for graphing. Example: *

1) **Graph the following circle:**

1. **(x - 3)2 + (y + 1)2 = 4**
2. **(x – 2)2 + (y – 5)2 = 9**
3. **(y + 4)2 + (x + 2)2 = 16**

**2) For each circle: Identify its center and radius.**

a. **(x + 3)2 + (y – 1)2 = 4**

Center:\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius:\_\_\_\_\_\_\_\_\_\_\_\_\_

b. **x2 + (y – 3)2 = 18**

Center:\_\_\_\_\_\_\_\_\_\_\_

Radius:\_\_\_\_\_\_\_\_\_\_\_\_

c. **(y + 8)2 + (x + 2)2 = 72**

Center:\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius:\_\_\_\_\_\_\_\_\_\_\_\_\_

3) **Write the equation of the following circles:**

**4) Give the equation of the circle that is tangent to the y-axis and center is (-3, 2).**

**Putting Equations in Standard Form**

Example 1: x2 + y2 + 6x – 8y – 11 = 0 Example 2: x2 + y2 – 2x + 6y – 10 = 0

(x2 + 6x) + (y2 – 8y) = 11

(x2 + 6x + 9) + (y2 – 8y + 16) = 11 + 9 + 16

(x + 3)2 + (y – 4)2 = 36

Center: (-3, 4) Radius: 6 Center:\_\_\_\_\_\_\_ Radius:\_\_\_\_\_\_\_\_\_\_

**6) Find the standard form, center, and radius of the following circles**:

6a) **x2 + y2 – 4x + 8y – 5 = 0**

Center:\_\_\_\_\_\_\_\_\_\_\_

Radius:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6b) **4x2 + 4y2 + 36y + 5 = 0**

Center:\_\_\_\_\_\_\_\_

Radius:\_\_\_\_\_\_\_\_\_\_\_

7) **Graph the following circles:**

**7a) x2 – 2x + y2 + 8y – 8 = 0**

**7b) x2 + y2 – 6x + 4y – 3 = 0**

**8) Give the equation of the circle whose center is (5,-3) and goes through (2,5)**

**9) Give the equation whose endpoints of a diameter at (-4,1) and (4, -5)**

**10) Give the equation of the circle whose center is (4,-3) and goes through (1,5)**

**11) Give the equation whose endpoints of a diameter at (-3,2) and (1, -5)**