**Graph and fill in all critical parts for each ellipse and circle.**

1. 

vertical or horizontal ellipse

Center: \_\_\_\_\_\_\_\_\_\_\_\_ a = \_\_\_\_\_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_\_\_\_

Length of Major Axis: \_\_\_\_\_\_\_\_\_\_\_\_

Length of Minor Axis: \_\_\_\_\_\_\_\_\_\_\_\_

Vertices: \_\_\_\_\_\_\_\_\_\_\_\_

Co-vertices: \_\_\_\_\_\_\_\_\_\_\_\_

Foci: \_\_\_\_\_\_\_\_\_\_\_\_ e = \_\_\_\_\_\_\_\_\_\_\_\_

Horizontal Axis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical Axis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

2. 9(x + 1) 2 + 4(y – 2) 2 = 144

vertical or horizontal ellipse

Center: \_\_\_\_\_\_\_\_\_\_\_\_ a = \_\_\_\_\_\_\_\_\_\_\_\_

b = \_\_\_\_\_\_\_\_\_\_\_\_ c = \_\_\_\_\_\_\_\_\_\_\_\_

Length of Major Axis: \_\_\_\_\_\_\_\_\_\_\_\_

Length of Minor Axis: \_\_\_\_\_\_\_\_\_\_\_\_

Vertices: \_\_\_\_\_\_\_\_\_\_\_\_

Co-vertices: \_\_\_\_\_\_\_\_\_\_\_\_

Foci: \_\_\_\_\_\_\_\_\_\_\_\_ e = \_\_\_\_\_\_\_\_\_\_\_\_

Horizontal Axis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical Axis \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 

**Write the equations for the following ellipses using the given information.**

3. Vertices at (-7, 3) and (3, 3) and

co-vertices at (-2, 0) and (-2, 6)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Vertices at (5, 1) and (5, 9) and

 foci at (5, 2) and (5, 8)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Foci at (-6, 2) and (4, 2) and length of the minor axis is 8.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. (x – 2) 2 + y 2 = 9

Center: \_\_\_\_\_\_\_\_\_\_\_\_ Radius = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Write equations of the following circles using the given information.**

7. Center at the origin

 radius = 3

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Center: (-2, 5)

 radius = 4

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Center: (-4, -5) and

 passes through the point (0, -2)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Endpoints of the diameter are at

(-2, 5) and (6, 1)

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_