Pre-Cal CW 9.1-9.3 Circles, Ellipses, Hyperbolas

1. Find the equation of the circle whose diameter has the coordinates (1, -7) and (9, -5) for endpoints.

2. What is the center and radius of: $9x^2 + 9y^2 + 54x - 36y + 17 = 0$

3. Write the following in standard Form:
   $$x^2 + y^2 - 10x + 9 = 0$$

Given: $\dfrac{(x-2)^2}{9} + \dfrac{(y+4)^2}{25} = 1$

4. What are the coordinates of the vertices?

5. What are the coordinates of the foci?

6. Find the equation of the ellipse with vertices of $(\pm 5, 0)$ and foci of $(\pm 4, 0)$.

Given: $9x^2 - 16y^2 - 18x - 32y - 151 = 0$

7. What are the coordinates of the center?

8. What are the coordinates of the vertices?

9. What are the equations of the asymptotes of $\dfrac{(x+1)^2}{16} - \dfrac{(y+4)^2}{25} = 1$ (2 simplified eqs)

10. Graph $\dfrac{(x-1)^2}{4} + \dfrac{(y-3)^2}{25} = 1$. Plot your foci. Be sure to label the coordinates of the vertices, and co-vertices.

11. Graph $\dfrac{(x+1)^2}{16} - \dfrac{(y+4)^2}{25} = 1$ Plot your foci. Be sure to label the coordinates of the vertices.