10-6 HW: Translating Conic Sections + Systems Homework

Identify the conic section represented by each equation, by first writing the equation in standard form. For a parabola, give the vertex. For a circle, give its center and radius. For an ellipse or hyperbola, give its center and foci.

1.
$$4x^2 + 8x + 9y^2 - 36y + 4 = 0$$

2.
$$x^2 - 10x - 4y^2 + 24y - 15 = 0$$

3.
$$x^2 + y^2 + 6y - 27 = 0$$

4.
$$y^2 + 2y - x + 3 = 0$$

5.
$$4x^2 + y^2 + 8x - 4y = 8$$

6.
$$x^2 + 2x + y^2 - 10y - 38 = 0$$

Write an equation of a conic section with the given characterisitics.

7. Hyperbola with vertices (0, 2) and (4, 2), and foci (-1, 2) and (5,2)

8. Ellipse with center (0, 2), horizontal major axis of length 6, and minor axis of length 4

Solve the system of equations by graphing.

9.
$$x^2 + y^2 = 100$$



10.
$$3x - 2y = 6$$

 $\frac{x^2}{4} + \frac{y^2}{9} = 1$