

Worksheet ---- Conic Sections

1. Find the equation of a circle whose endpoints of its diameter are (7, 3) and (-1, -3).

2. Classify each of the following as the equation of a circle, an ellipse, a parabola, or a hyperbola. Write each equation in standard graphing form.

(a) $x = -y^2 + 2y - 1$ _____ (b) $4x^2 - 9y^2 - 100 = 0$ _____

(c) $x^2 + y^2 = 2x + 4y + 4$ _____ (d) $x - \frac{3}{y} = 0$ _____

(e) $9y^2 = 36 - 4x^2$ _____ (f) $y + 6x = x^2 + 6$ _____

3. Graph each conic section.

(a) $9x^2 + 16y^2 = 144$

(b) $x = y^2 - 4y + 6$

4. Graph each conic section.

(a) $x^2 + y^2 - 2x - 6y - 15 = 0$

(b) $\frac{y^2}{16} - \frac{x^2}{9} = 1$

5. Solve each system.

(a)
$$\begin{cases} x^2 + 4y^2 = 25 \\ x + 2y = 7 \end{cases}$$

(b)
$$\begin{cases} x + y = 5 \\ y = 3 - x^2 \end{cases}$$

+

(c)
$$\begin{cases} 2x^2 + 5y^2 = 22 \\ 3x^2 - y^2 = -1 \end{cases}$$