

Writing Conics In Standard Form

Classify each conic section and write its equation in standard form.

1) $x^2 + y^2 - 6y = 0$

2) $-9x^2 + 4y^2 - 54x + 8y - 113 = 0$

3) $x^2 + y^2 + 2x + 8y + 12 = 0$

4) $x^2 + 9y^2 - 8x - 18y + 16 = 0$

5) $y^2 + 2x - 4y = 0$

6) $9x^2 + 16y^2 + 54x + 32y - 47 = 0$

7) $x^2 + 8x + y + 19 = 0$

8) $9x^2 - 4y^2 + 54x + 45 = 0$

Answers to Writing Conics In Standard Form

1) Circle

$$x^2 + (y - 3)^2 = 9$$

2) Hyperbola

$$\frac{(y + 1)^2}{9} - \frac{(x + 3)^2}{4} = 1$$

3) Circle

$$(x + 1)^2 + (y + 4)^2 = 5$$

4) Ellipse

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

5) Parabola

$$x = -\frac{1}{2}(y - 2)^2 + 2$$

6) Ellipse

$$\frac{(x + 3)^2}{16} + \frac{(y + 1)^2}{9} = 1$$

7) Parabola

$$y = -(x + 4)^2 - 3$$

8) Hyperbola

$$\frac{(x + 3)^2}{4} - \frac{y^2}{9} = 1$$