

Classifying Conic Sections

Classify each conic section.

1) $x^2 + y^2 = 30$

CIRCLE

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

ELLIPSE

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

PARABOLA

7) $y = (x-1)^2 + 3$

PARABOLA

2) $x^2 + y^2 = 36$

CIRCLE

4) $x = y^2$

PARABOLA

6) $\frac{y^2}{25} - \frac{x^2}{25} = 1$

HYPERBOLA

8) $(x-1)^2 + \frac{y^2}{25} = 1$

ELLIPSE

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

9) $-x^2 + 10x + y - 21 = 0$

PARABOLA

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

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

PARABOLA

$$(x+1)^2 = -(y-2)$$

13) $x^2 - y^2 - 2x - 8 = 0$

HYPERBOLA

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

15) $-9x^2 + y^2 - 72x - 153 = 0$

HYPERBOLA

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

10) $-2y^2 + x - 20y - 49 = 0$

PARABOLA

$$(y+5)^2 = \frac{1}{2}(x+1)$$

12) $x^2 + y^2 + 6x - 2y + 9 = 0$

CIRCLE

$$(x+3)^2 + (y-1)^2 = 1$$

14) $3x^2 + 30x + y + 79 = 0$

PARABOLA

$$(x+5)^2 = -\frac{1}{3}(y+4)$$

16) $-y^2 + x + 8y - 17 = 0$

PARABOLA

$$(y-4)^2 = (x-1)$$