10-7

Practice

Transformations of Conics

Identify the graph of each equation. Write an equation of the translated or rotated graph in general form.

1. $2x^2 + 5y^2 = 9$ for $T_{(-2, 1)}$

2. $2x^2 - 4x + 3 - y = 0$ for $T_{(1, -1)}$

3. $xy = 1, \theta = \frac{\pi}{4}$

4. $x^2 - 4y = 0, \theta = 90°$

Identify the graph of each equation. Then find θ to the nearest degree.

5. $2x^2 + 2y^2 - 2x = 0$

6. $3x^2 + 8xy + 4y^2 - 7 = 0$

7. $16x^2 - 24xy + 9y^2 - 30x - 40y = 0$

8. $13x^2 - 8xy + 7y^2 - 45 = 0$

9. ***Communications*** Suppose the orientation of a satellite dish that monitors radio waves is modeled by the equation $4x^2 + 2xy + 4y^2 + \sqrt{2}x - \sqrt{2}y = 0$. What is the angle of rotation of the satellite dish about the origin?