

HW 2 - Analytic and Differential geometry 88-201

Submission deadline: April 3, 2025.

Bring the following equations to canonical form and determine which conic section (ellipse, hyperbola, etc.) each equation describes.

1. $4x^2 + y^2 - 40x + 6y + 93 = 0$

2. $12x^2 + 12xy + 12y^2 + 6x + 6y + 1 = 0$

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

4. $xy - 2x - 6y + 11 = 0$

5. $x^2 + 2xy + 3y^2 - 4x - 5y + 10 = 0$