Prof. Dr. Dorin Andrica

Asist. Drd. Tudor Micu

1st Semester, 2018-2019

Geometry 1 (Analytic Geometry)

Exercise Sheet 14

Exercise 1. Find the canonical equation for the conics:

1. $5x^2 + 4xy + 8y^2 - 32x - 56y + 80 = 0$;

2. $8y^2 + 6xy - 12x - 26y + 11 = 0$;

3. $x^2 - 4xy + 4y^2 - 6x + 2y + 1 = 0$;

4. $9x^2 - 4xy + 6y^2 + 16x - 8y - 2 = 0$;

5. $4xy + 3y^2 + 16x + 12y - 36 = 0$.

Exercise 2. Discuss the nature of the conics in the family

$$x^2 + \alpha xy + y^2 - 6x - 16 = 0, \alpha \in \mathbb{R}$$