

### Math 124 – Homework 3

Due date: 5 May 2009 Tuesday

Please take your homework solutions to room SA144, Ali Adalı's office before 17:00.

- 1) Consider the folium of Descartes  $x^3 + y^3 - 3axy = 0$  where  $a > 0$  is a constant. Sketch the behavior of this curve at infinity.

This means the following: First sketch the curve, finding its asymptote. Then homogenize the equation with respect to  $z$  and dehomogenize with respect to  $y$ . Now sketch the curve in the  $xz$ -plane. Finally identify the parts in  $xy$ -plane with the corresponding parts in the  $xz$ -plane. Use colors and arrows! Geometry is and must remain fun.