

Math 406-History of Calculus- Homework 3

Due date: September 26-**Submission in pairs**

- (1) Let us recall the usual definition of an ellipse. Fix two points F_1 and F_2 in the plane and let \mathcal{E} be the collection of all points p such that

$$\text{dist}(P, F_1) + \text{dist}(P, F_2) = R .$$

Here $\text{dist}(P, F)$ is the euclidian distance and R is larger than distance between the two points. Assuming that F_1 and F_2 are on the x -axis and have equal distance to the origin. Show that there is a circle C and a, b such that in Cartesian coordinates (x, y) belongs to the circle if and only if $(x, a/by)$ belongs to the ellipse.

- (2) Exercise 17 on page 57
- (3) Read about the method of compression. Does it remind you of something in the lecture?
- (4) Exercise 11 on page 50.