Math 9023 Homework 2

Due Thursday, 2/5/15

1. Let $C \subset \mathbb{H}^2$ be a hyperbolic circle. That is, C is the locus of all points at fixed distance from some center. Prove that C is also a Euclidean circle in the upper half-plane and Poincaré disk models. How can we find the (hyperbolic) center of C in the upper half-plane model?

2. Do Exercise 3.5 in Purcell's notes.

3. Do Exercise 3.6 in Purcell's notes.