Mathematics 3260H – Geometry II: Projective and non-Euclidean geometry
TRENT UNIVERSITY, Winter 2015

Assignment #2=1+1*
Lines in the elliptic plane
Due on Thursday, 29 January, 2015.

In the problems below, you may assume that any (or all) of the models of the elliptic plane discussed in class are "the" elliptic plane. That is, you may use the properties of these models in your proofs.

1. In the Euclidean plane any line divides the plane into two parts such that any line segment starting in one part and ending in the other must cross the dividing line. Determine whether or not this is true in the elliptic plane. *[5]*

2. In the Euclidean plane the collection of points a fixed distance from and on one side of a given straight line is also a straight line. Determine whether or not this is true in the elliptic plane. If you do not get a straight line in the elliptic plane, just what sort of curve do you get? *[5]*