

Math 4060 (Cherry) Homework Assignment #30

Due Wednesday, April 26

1. Let Γ be a circle thought of as the boundary of a Poincaré plane. Let γ be a P -line and let $A, B,$ and C be three points on γ . Let δ be a P -line, and let $A', B',$ and C' be the images of $A, B,$ and C under inversion through δ . Recall that we proved in class that $A', B',$ and C' lie on a P -line γ' . (a) Prove that the P -segments $\overline{AA'}, \overline{BB'}, \overline{CC'}$ are P -parallel. (b) Use part (a) to conclude that $A * B * C$ if and only if $A' * B' * C'$.

