

Math 361: Introduction to Topology
Asst. 3, due F., 2/10

- read sections 1.5, 1.6, 2.1 of Messer/Straffin

You should submit at least 4 of the following problems.

Required

1. **stereographic projection** from a sphere minus a point to \mathbb{R}^2 : You should derive the formulas given in Example 1.35 for T and T^{-1} . Then complete 1.4.5.
2. Find a homeomorphism between these sets, and show that it is a homeomorphism.
 - (a) $(-1, 1)$ and \mathbb{R}
 - (b) $[0, 1)$ and $[0, \infty)$
 - (c) the open disk $\{x^2 + y^2 < 1\}$ and \mathbb{R}^2
3. 1.5.8

Optional Problems

1.4.2, 1.4.8, 1.4.14
1.5.6, 1.5.7, 1.5.13