Geometry I — Homework 9 — Due 16th Dec

- 1. Let l and m be two distinct lines and let T_l and T_m be the reflections across l and m. Prove that if l and m are parallel lines, then $T_l \circ T_m$ is a translation. Prove that otherwise $T_l \circ T_m$ is a rotation.
- 2. Prove that the isometry $f(z) = \overline{z}$ is a reflection across a line.
- 3. Prove that the isometry $f(z) = -iz + \sqrt{2}$ is a rotation. What is the angle of counterclockwise rotation of f?
- 4. Explain why neither of the following functions is an isometry: z^4 , 10z and |z-2|.