

PROBLEM SET 1

TOPICS IN MANIFOLDS, SPRING 2016

Problem 1. Show that any isometry of \mathbb{R}^3 is the product of one, two, three, or four reflections.

Problem 2. Show that the angular excess is additive for a spherical or hyperbolic polygon (see Exercises 1.6.1 – 1.6.3 from Stillwell).

Problem 3. Classify the isometries of the twisted cylinder (see Exercise 2.3.3 from Stillwell).

Problem 4. Classify the isometries of the torus (see Exercises 2.4.2 – 2.4.3 from Stillwell).