

# Math 371 - Lie Theory

## Homework Assignment 3

Due Sep 14

1. Problem 2.1.3 from the textbook.
2. Problem 2.1.4 from the textbook.
3. Problem 2.1.5 from the textbook.
4. Problem 2.1.6 from the textbook.
5. Problem 2.2.5 from the textbook.
6. Let  $\mathbb{S}^1$  be the group of unit complex numbers. Prove that  $\{\pm 1, \pm i\}$  is a normal subgroup of  $\mathbb{S}^1$ . Identify the quotient group  $\mathbb{S}^1/\{\pm 1, \pm i\}$  by proving that it is isomorphic to a group we already know.