Homework 2 for **MATH 435**

Due: Friday Sep 10

Problem 1

Book, p. 123, Exercise 2.21, (i)-(vi)
(*The answers are in the back of the back, but give the reasons.*)

Problem 2

Let T be a tetrahedron, and denote by $\mathbb{T}$ the *tetrahedral group*, i.e. the full symmetry group of T. Label the vertices of T as $1, 2, 3, 4$. As discussed in class, every symmetry of T this way corresponds to a permutation in S_4. Show that indeed every permutation in S_4 is realized this way. (I stated this in class but did not prove it.)

Problem 3

Book, p. 124, Exercise 2.24

Problem 4

Book, p. 124, Exercise 2.25