# Assignment 2, due Fri, Jan 27

1. Define the rational numbers, $\mathbb{Q}$, as equivalence classes of an appropriate equivalence relation defined on the set $S = \{(a, b) \mid a, b \in \mathbb{Z}, b \neq 0\}$. You must specify the equivalence relation precisely. Define the operations of addition, multiplication, as well as taking multiplicative inverses in the structure you defined. Make sure that you prove in every instance that the operation you defined is *well-defined, i.e. it does not depend on the choice of representatives.*
2. Problems 5-9 and 11-12 on pages 16-17 (Section 1.2).