Homework 9 due April 4

- 1. You need to know: all definitions and propositions (with proof) covered in class from Section 6 in Dr. Richardson's notes.
- 2. Give an example of each or state that the request is impossible:
 - (a) $f: \mathbb{N} \to \mathbb{N}$ that is 1 to 1 but not onto.
 - (b) $f : \mathbb{N} \to \mathbb{N}$ that is onto but not 1 to 1.
 - (c) $f : \mathbb{N} \to \mathbb{Z}$ that is 1 to 1 and onto.
- 3. Prove Lemma 6.1 on page 17 of Dr. Richardson's notes.
- 4. Prove Propositions 6.4, 6.8, and 6.9 on pages 18-19 in Dr. Richardson's notes.
- 5. Do problems 24, 26, 27, 32 from the list of Bridge Course Problems (by Dr. Richardson).