MATH 321: HOMEWORK 7
DUE MONDAY, APRIL 6 BY 11:00PM

Problem 1. Do Exercise 11.1 from the textbook (page 130).

Problem 2. Do Exercise 11.2 from the textbook (page 130).

Problem 3. Do Exercise 11.4 from the textbook (page 130).

Problem 4. Do Exercise 11.6 from the textbook (page 130).

Problem 5. Do Exercise 11.20 from the textbook (page 130).

Problem 6. Do Exercise 11.21 from the textbook (page 130).

Problem 7. Given a relation $\dagger$ on a set A, let $\bar{\dagger}$ denote its transitive closure, as defined in the slides from lecture. Prove that $\bar{\bar{\dagger}} = \bar{\dagger}$ for any relation $\dagger$. That is, prove that the transitive closure of the transitive closure of a relation is just the transitive closure of that relation. [Hint: as a lemma, prove that if $\star$ is transitive then $\bar{\star} = \star$.]