

CS 1155: Understanding and Constructing Proofs

Spring 1999

Home work 5 // Due: Friday, May 14, 1999

1. (10 points) Exercises 3.5, problem 5 (b), page 174 of the text.
2. (10 points) Exercises 3.5, problem 18, page 176 of the text.
3. (15 points) Let A be a set with 10 elements.
 - (a) How many different binary relations on A are there?
 - (b) How many of them are reflexive?
 - (c) How many of them are symmetric?
4. (15 points) Let R be a transitive and reflexive relation on a set A . Let T be a relation on A such that (a, b) is in T if and only if both (a, b) and (b, a) is in R . Prove that T is an equivalence relation.
5. (10 points) Exercises 3.6, problem 8 (a), (b), page 183 of the text.
6. (15 points) Exercises 3.6, problem 14 (b), (c), and (d), page 184 of the text.
7. (10 points) Exercises 3.6, problem 16 (a), (b), page 184 of the text.
8. (15 points) Exercises 4.2, problem 16, page 211 of the text.