CSE 321: Discrete Structures
Assignment #8
December 3, 2004
Due: Friday, December 10

Reading Assignment: Read Sections 8.1 – 8.5.

Problems:

1. Suppose that relation R is reflexive. Show that the transitive closure of R is also reflexive.
2. Section 7.4, exercise 26 part c). Show the matrices after each step.
3. Section 7.5, exercise 44 part a).
   Extra credit: Part b).
4. A relation R is called *circular* if aRb and bRc imply that cRa for every $a, b,$ and c. Prove that R is reflexive and circular if and only if it is an equivalence relation.
5. Section 8.2, exercise 28. If no such graph exists, explain why.
6. Section 8.3, exercises 34, 36, 38, 40, 42.
7. **Extra Credit:** Prove that if an undirected graph G is not connected, then its complement is connected.