

CS 2802: Homework 4

February 11, 2019

Handed out Feb. 11; due Feb. 18

- Read Chapter 5
- Do the following problems:
 - 5.5
 - 5.6(a)
 - 5.7
 - 5.16(a), (c), (d), (e), (h)
 - 5.21
 - 5.24
 - 5.30

and the following:

- Extra Problem 1: Recall the inductive definition of transitive closure of R given in class:
 - * Suppose that R is a relation on S . Let $R_0 = R$.
 - * Let $R_{n+1} = R_n \cup \{(s, t) : \exists u \in S((s, u) \in R_n, (u, t) \in R_n)\}$.
 - * Let $R' = \bigcup_{n=0}^{\infty} R_n$.

Prove that R' is the transitive closure of R .