CSE 322 Autumn 2004

Homework Assignment # 6

Due Date: Wednesday, December 1 (at the *beginning* of class)

1. (20 points) Exercise 2.11 in the textbook.
2. (25 points) Problems 2.17a and 2.17b in the textbook. (Hint for (a): Consider the machines for C and R. Build a new PDA that recognizes C ∩ R. Additional hint: Use the Cartesian product idea from the proof of Theorem 1.12 in the text. Hint for (b): You are asked to use part (a) and not the pumping lemma. Try to find a regular language R such that A ∩ R is a language that we have already shown is not context free.)
3. (20 points) Problems 2.18c and 2.18d in the textbook.
4. (15 points) Give the sequence of configurations (see page 132 for an example run) that the Turing machine M_1 (Figure 3.5) enters for the following inputs:
    a. 00
    b. 0#1
    c. 01#01
5. (20 points) Give an <u>implementation level description</u> of a decider Turing machine that decides the language in Problem 2.18c in the textbook.