4   Homework

Due: Wednesday, October 17, 2007.

Instructions

- Please, review the homework grading policy outlined in the course information page.

- On the *first page* of your solution write-up you *must* make explicit which problems are to be graded for regular credit, whic problems are to be graded for extra credit, and which problems you did not attmept. Use a table that looks like this:

Problem	1	2	3	4	5	6	7	8	9	...
Credit	RC	RC	RC	EC	RC	EC	NA	NA	EC	...

  where "RC" denotes "regular credit", "EC" denotes "extra credit", and "NA" denotes "not attempted". Failure to include such a table will result in an arbitrary set of problems being graded for regular credit, no problems being graded for extra credit, and a 5% penalty assessment.

- You must also write down with whom you worked on the assignment. If this varies from problem to problem, write down this information separately with each problem.

Problems

Required: 5 of the following 7 problems
Points: 20 points per problem

1. Do Problem 2.1 for the following strings:

    - $a + a$
    - $(a \times a)$
    - $a + a \times a$
    - $(a + a) \times a$

2. Give the context-free grammars that generate the following languages:

   - 2.4 (e)
   - 2.6 (b)
   - 2.6 (d)

3. Do the following:

   (a) Do Problem 2.9
   (b) Do Problem 2.13

4. Do Problem 2.26

5. Convert each of the CFGs below to an equivalent PDA, using the procedure given in Theorem 2.20:

   (a) The grammar from the Problem 2.4 (e)
   (b) The grammar from the Problem 2.6 (b)

6. Do the following:

   (a) Do Problem 2.27 (a)
   (b) Do Problem 2.27 (b)

7. Do the following:

   (a) Do Problem 2.15
   (b) Do Problem 2.16