Topics For Exam 2

1. Grammars, derivations and parsing. We talked a little about context-sensitive grammars but the exam is only over context-free grammars. We talked about how to design grammars to determine the precedence and associativity of operators and those things will not be on the exam. I do expect you to be able to write a grammar from the description of a language, too derive a string from a grammar or to construct the parse tree for a string derived from a grammar.

2. PDAs. You should be able to construct them.

3. PDAs are equivalent to grammars. Given a grammar you should be able to construct and use an equivalent PDA. I am unlikely to ask you to construct a grammar from a PDA.

4. You should be able to convert a grammar to Chomsky Normal Form and know why we do that.

5. You should be able to use the Pumping Lemma to show that a language is not context free.

6. To show that a language is context free find either a grammar or a PDA for it.

7. You should know the closure properties of context-free languages (unions? intersections? complements?)

8. There is nothing very interesting about deterministic PDAs other than that they are more limited than standard nondeterministic PDAs.

9. You should be able to construct a Turing Machines that accepts a given language or performs a given computation.