CS480
Translators
Test Review
Chap. 1 - 4.3
Quiz #5

• For each grammar below, left factor and/or remove left recursion first.

(b) $S \rightarrow 0S1 \mid 01$

(c) $S \rightarrow S(S)S \mid \varepsilon$
Test 1 Review

• Characteristics common to all translators
• Construct an expression tree
• Polish and Reverse polish notation
• Construct a DFA from a regular expression
• Change a NFA to a DFA w/ subset construction
• Syntax vs. Semantics
• Why would a lexical analyzer peek at a character
• Purpose of Symbol Table(s)
• The purpose of a token vs. a lexeme
• What is the purpose of Lex
• Transforming a Grammar
Expression Tree Example

• Provide the expression tree, and provide the polish and reverse polish notation.

\[ \frac{8}{4} \times 6^3 \div 12 - 2 \times 9 + 8 \]
Example Question for DFAs

• Suppose comments are defined by a two character sequence, a slash followed by a star, as in the C convention of /* whatever */. Comments can contain any text, including the star symbol and slash, just not the two character sequence that ends the comment. So /***/ is a legal comment, but /*/ is not. Write a DFA recognizing legal comments.
Example Question for NFA to DFA

• Using subset construction, create a DFA from this NFA

Figure 3.30: NFA for Exercise 3.6.4