Due date: October 15, 2008

1. Do the following from the TEXT.
   2.4 (a - f), 2.6 (a - d)

2. Find a CFG for each of the following languages (with \( n, m, k \geq 0 \).)
   (a) \( L = \{a^nb^m \mid n \leq m + 3 \} \).
   (b) \( L = \{a^nb^m \mid n \neq m \} \).
   (c) \( L = \{w \in \{a, b\}^* \mid n_a(w) = 2n_b(w) + 1 \} \).
   (d) \( L = \{a^mb^n c^k \mid k = n + m \} \).
   (e) \( L = \{a^mb^n c^k \mid n + 2m = k \} \).
   (f) \( L = \{w \in \{a, b, c\}^* \mid n_a(w) + n_b(w) \neq n_c(w) \} \).