COMP 312
Assignment 6
Due at 9 a.m., Tuesday, November 24, 2009
All problems are of equal value.

Reading

Cormen, Leiserson, Rivest, Stein, Chapter 34.

Practice

CLRS, 34.1-2...6, 34.2-1...11, 34.3-1..3, 34.3-6, 34.3-7, 34.4-3...6, 34.5-1...6, 34.5-8, 34-2, 34-3.

To Be Handed In

1. CLRS, 34.1-1
2. CLRS, 34.4-7
3. CLRS, 34.5-7
4. CLRS, 34-1 (a), (b) and (c)
5. (a) DNF-SAT is the problem of given a boolean formula in Disjunctive Normal Form, decide if it is satisfiable. Show that DNF-SAT is in P.
   (b) Show how to convert any formula that is in CNF to an equivalent formula in DNF.
   (c) What is wrong with the following proof that $P = NP$? By part (b) we have that CNF-SAT $\leq$ DNF-SAT. Since CNF-SAT is NP-complete we have that DNF-SAT is NP-complete (by Lemma 34.8). But by part (a) DNF-SAT is in P and therefore $P = NP$ (by Theorem 34.4).