CMPS201 2nd Homework, Fall 2004
Three problems, 25 points. Due Tuesday, October 12
The reading for this week is Section 31.2, and Chapters 6 through 8.

1. (5 pts) Exercise 28.2-3 on page 741 (Strassen: beating $n^{\log_7 7}$ with $3 \times 3$ matrices).

2. (10 pts) Exercise B.5-5 on page 1091 (was problem 5.5-6 on page 97 in the old edition, internal and external path lengths). For a tree $T$, use the following notation:
   - $N(T)$ is the number of internal nodes in $T$,
   - $L(T)$ is the number of leaves (external nodes) in $T$,
   - $e(T)$ is the external path length in $T$, and
   - $i(T)$ is the internal path length in $T$.
   You may use the fact that if $T$ is a non-empty full binary tree, then $N(T) + 1 = L(T)$.

3. (10 pts) Problem 7-4 on page 162 (quicksort stack depth, was problem 8-4 in old edition).