EECS 311: Data Structures and Data Management Homework 7
Assigned: 11/11/10 Due: 11/18/10

1 Reading.

Chapter 6 (except 6.5–6.7)

2 Problems.

1. In class we discussed a linear-time algorithm, *build-heap*, for building a binary heap from an unordered array. You wisely observed that the algorithm can be improved by skipping over nodes with no children.

   (a) Give a closed-form formula for the first node that should be processed (as a function of n). I.e., what should X be in the *build-heap* algorithm below (input: an unordered array):

   - view array as complete binary tree.
   - for $i = X$ down to 1, percolate-down(i).

   (b) Explain why your formula is correct.

2. Problem 6.16.

3. Problem 6.17.