

CS 332: Algorithms
Homework #3

Assigned: Thursday, October 5

Due: Thursday, October 12 **at 5 PM** (not midnight as previously)

Please turn in the assignments to Ginny or Brenda at the Computer Science front desk.

A clarification on the late policy: assignments 1 day late (i.e., turned in by 5 PM Friday) automatically lose 1 point (out of a possible 10). Assignments 2 days late (i.e., turned in by 5 PM Saturday) lose 3 points. To turn in a late assignment, hand it to me or shove it under my office door.

1. Exercise 10.3-1. You must prove your answer for the 7-element case, but you can argue it informally in the 3-element case (since a rigorous proof is a bit difficult).
2. Problem 10-1.
3. Exercise 9.1-3. Hint: Consider the height of the decision tree, and use the same argument as the proof of theorem 9.1.
4. In a binary search tree, an inorder tree walk can print the nodes in sorted order taking $\Theta(n)$ time. Argue informally that the heap property is not strong enough to print the nodes in sorted order in $\Theta(n)$ time.
5. Problem 13-2.
6. [For 1 point extra credit] Exercise 9.1-4.