

CSci 3501 Assignment 4
Due Monday, October 3rd in class

Problem 1 (4 points). Exercises 6.1-5, 6.1-6 p. 154.

Problem 2 (6 points). Exercises 6.2-1 p. 156, 6.3-1 p. 159.

Problem 3 (8 points). Exercises 6.4-1, 6.4-3 p. 160. Clearly explain your answers for 6.4-3.

Problem 4 (6 points). Exercises 7.2-4 p. 178 (use the known efficiencies of quicksort and insertion sort), 7.3-2 p. 180.

Problem 5 (8 points). Exercise 7-2 p. 186. This algorithm modifies quicksort to counteract its efficiency issues on equal elements. Write the pseudocode for PARTITION' and the corresponding randomized version. Part d just asks you for analysis of the new version of the randomized quicksort. **There are a couple of typos in part c. The intention of it is to write the top-level function of the version of quicksort that uses a randomized pivot and the new three-part sorting. One of the function calls there is also missing an array A by mistake.**

Problem 6 (8 points). Exercises 8.2-1 p. 196, 8.3-1 p. 199.

Problem 7 (4 points). Exercise 8.4-1 p. 204.