

**CSci 1302 Assignment 8**  
**Due Wedn., November 16th**

**Problem 1 (10 points).** Some implementations of the quick sort algorithm choose a pivot the following way: take the first three elements in the array, compare them to each other, and take pivot to be the middle one.

1. How many comparisons does this add to a pass of quick sort (a pass here means separating an array into two sub-arrays and the pivot)? Please explain your answer.
2. Does it change the worst-case efficiency of the algorithm? Please explain, use the result from question 1.
3. What is the purpose of this procedure? Please give a detailed answer.

**Problem 2 (10 points).** Exercise 11 p. 267.

**Problem 3 (2 points).** Exercise 14 p. 268.

**Problem 4 (1 point).** Exercise 18 b p. 268.

**Problem 5 (4 points).** Exercise 20 b,c p. 268.

**Problem 6 (3 points).** Exercise 22 b,c,e p. 268.

**Problem 7 (8 points).** Exercises 28c, 29 b,c,d p. 268.