**2)** (10 pts) ALG (Sorting)

(a) (1 pt) Which of the sorting algorithms (listed in part d) could encounter problems if an array can contain duplicates? (Specifically, for four of the algorithms, whether or not there are duplicates in the array don't alter the run-time of the algorithm on individual cases, but one of the algorithms, in its original form, is definitively affected.)

(b) (2 pts) What problem could be encountered?

(c) (2 pts) Pick one of the algorithms that aren't affected by duplicates and explain why it runs similarly with or without duplicates.

(d) (5 pts) What is the worst case runtime for the following sorting algorithms on an array with ***n*** distinct values? Please list your answers with Big-Oh notation, using proper conventions.

Quick _____

Bubble _____

Insertion _____

Merge _____

Selection _____