

**Instructions**

1. This is an individual assignment. You must do your own work.
2. Show all work. Incomplete solutions will **not** receive full credit

**Problem 1 (6 Points)**

What is the best case for Insertion Sort? And the worst case? Please give an example (a list with at least 5 integers) for each case.

**Problem 2 (6 Points)**

List the upper-bounds (in terms of those comparisons and swaps) of best, worst and average case for Bubble Sort.

**Problem 3 (4 Points)**

Given a list of integers arranged from highest to lowest as input, which sorting algorithm is faster? Insertion Sort or Selection Sort? Briefly explain your answer.

**Problem 4 (4 Points)**

Why does Shell Sort use insertion sort to sort its sublists?