

CSCI 303 Algorithms

Homework 6

Due: 11:00 in class, October 23, 2001

1. (10 points) Determine the time complexity of Insertion Sort, Selection Sort, and Bubble Sort on sorted input, reversely sorted input, and input of identical elements. Assume that the input list has n elements. You may provide the answers by filling out the following table.

	Sorted	Reversely sorted	Identical
Insertion Sort			
Selection Sort			
Bubble Sort			

2. Answer the following questions about Shell Sort:
- (a) (5 points) Show the steps (passes) of running Shell Sort on the input 9, 8, 7, 6, 5, 4, 3, 2, 1 using the sequence 7, 3, 1.
 - (b) (5 points) What is the worst-case time complexity of Shell Sort to sort any list of size n with the sequence 2, 1? Justify your answer.