Searching and Sorting Worksheet

List the number of checks for the Binary Search versus the Linear Search. Also list the values for first, last, mid, A[mid], and found for the Binary Search when array A contains the following data:

2 3 5 7 9 12 13 15 21 24 26 28 35 37

1. NumbSearch = 7

   Sequential Searches _____

   first last mid A[mid] found?

   Binary Searches _____

2 3 5 7 9 12 13 15 21 24 26 28 35 37

2. NumbSearch = 16

   Sequential Searches _____

   first last mid A[mid] found?

   Binary Searches _____

Show all work. Put lists in ascending order. List the number of swaps and the order after each pass. List the total number of passes and total number of swaps.

A. Dumb Bubble Sort

1.

UNSORTED LIST SWAPS

8 6 1 4 3 5 2

Total Passes _____ Total Swaps _____

2.

UNSORTED LIST SWAPS

7 6 5 6 3 2 1

Total Passes _____ Total Swaps _____

B. Smart Bubble Sort

1.

UNSORTED LIST

3 6 1 4 0 5 2

SWAPS

Total Passes _____

Total Swaps _____

2.

UNSORTED LIST

6 5 4 5 3 2 1

SWAPS

Total Passes _____

Total Swaps _____

C. Selection Sort

1.

UNSORTED LIST

8 6 3 4 7 5 2

SWAPS

Total Passes _____

Total Swaps _____

2.

UNSORTED LIST

9 8 5 2 3 7 1 4

SWAPS

Total Passes _____

Total Swaps _____

D. Insertion Sort

1. UNSORTED LIST SWAPS

8 6 3 4 7 5 2

Total Passes _____ Total Swaps _____

2. UNSORTED LIST SWAPS

9 8 5 2 3 7 1 4

Total Passes _____ Total Swaps _____

Determine if the arrays listed below have been sorted by the (A) Bubble, (B) Selection, (C) Insertion, or (D) Can't be determined. (Assume no early exit for the Bubble sort.)

_____ 1.

2	3	5	4	1
1	3	5	4	2
1	2	5	4	3
1	2	3	4	5
1	2	3	4	5

_____ 2.

6	2	4	8	3
2	6	4	8	3
2	4	6	8	3
2	4	6	8	3
2	3	4	6	8

_____ 3.

3	7	5	2	1	6
3	5	2	1	6	7
3	2	1	5	6	7
2	1	3	5	6	7
1	2	3	5	6	7
1	2	3	5	6	7

_____ 4.

1	0	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4

_____ 5.

1	2	3	5	4
1	2	3	5	4
1	2	3	5	4
1	2	3	4	5
1	2	3	4	5

_____6.

1	3	2	4	5
1	3	2	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5