

## **COP 3502 Recitation Sheet: Sorting Problems**

1) Show the result of sorting the following array via **Bubble Sort**, showing the contents after each iteration of the algorithm:

2) Show the result of sorting the following array via Insertion Sort, showing the contents after each iteration of the algorithm:

3) Show the result of sorting the following array via **Selection Sort** (where we select for the maximum value on the first iteration), showing the contents after each iteration of the algorithm:

4) In the process of Merge Sorting the array below, there are a total of 7 calls to the Merge function. Show the contents of the array after each one of those calls, in the sequence in which the calls complete.

Initial	3	2	16	8	12	9	19	1
1 <sup>st</sup> merge								
2 <sup>nd</sup> merge								
3 <sup>rd</sup> merge								
4 <sup>th</sup> merge								
5 <sup>th</sup> merge								
6 <sup>th</sup> merge								
7 <sup>th</sup> merge								

5) Show the result of running the Partition algorithm shown in class on the following array, using the item currently in index 0 as the partition element:

Index	0	1	2	3	4	5	6	7	8
Value	13	6	22	27	10	19	5	4	11
After Partition									

6) For fun, here's a link to a Kattis problem that requires sorting:

<https://open.kattis.com/problems/aprzenoonecanwin>

(This is just in case anyone finishes the given exercises early!)