1.   Three commonly used, but inefficient sort algorithms are Insertion sort, Selection sort and Bubble sort. There is code for the Selection sort on page 629 and for Insertion sort on pages 638. Modify the code from class on September 5 to include the Selection sort and Insertion sort methods. Run your program for 50,000 integers, 100,000 integers and 200,000 integers.

2.   Your textbook discusses the Heap sort on pages 802 to 806, in Chapter 17 that deals with Tree data structures. See the HeapDemo code on the course web page. Your textbook discusses the Merge sort in section 14.4 with code on pages 640 and 641. The Quicksort algorithm is discussed on pages 644 and 645. Complete code can be downloaded from the textbook support web page. Use these three sort algorithms and the static sort method in the Arrays class to sort 10 million integers, 20 million integers, and 40 million integers.

Turn in a printed copy of your source code and execution output. Include a paragraph describing your observations of run times compared to array sizes for the various sort algorithms. What sort algorithm is the Arrays sort method using?