2) (10 pts) ANL (Sorting)

Jesse has mistakenly written his Merge Sort so that instead of making recursive calls on each half of the array (code below), he calls a function that runs an Insertion Sort on each half of the array. You may assume the function insertionSort runs properly and executes the steps of an Insertion Sort. He tests his function on an array of size 100,000 in reverse sorted order, and discovers that instead of running in under one second, his code takes 9 seconds. How long (in seconds) would sorting the same array (100,000 elements in reverse order), ***on the same computer***, using a single Insertion Sort, be expected to take?

To earn full credit, you must justify your answer by looking at the number of simple operations in both algorithms and comparing the differences in multiplicative constants between the two algorithms.

```
void mergeSort(int array[], int low, int high) {
    if (low >= high) return;
    int mid = (low+high)/2;
    insertionSort(array, low, mid);
    insertionSort(array, mid+1, high);
    merge(array, low, mid, high);
}
```