# Chapter 19 Homework

1. What key aspect of both the binary search and the merge sort accounts for the logarithmic portion of their respective Big O's?
   1. The splitting of arrays in half prior to further instruction.
2. If a sorting or search algorithm is easy to understand it is usually \_\_\_\_ to implement and \_\_\_\_ efficient than a more complicated sorting or searching algorithm.
   1. Easy to implement; less efficient
3. If an algorithm is completely independent of the number of elements in the array, it is said to have a(n) \_\_\_\_ run time.
   1. Constant
4. A Big O of *O*(*n*2) is said to have a(n) \_\_\_\_\_ run time.
   1. Quadratic
5. In what sense is the insertion sort superior to the merge sort? In what sense is the merge sort superior to the insertion sort?
   1. Insertion sort is simple and easy to implement but far less efficient than merge sort. Merge sort is more complicated but more effcient.