Section 6: Sorting & Intro to Graphs

0. Sorting Hat

Suppose we sort an array of numbers, but it turns out every element of the array is the same, e.g.,{17, 17, 17, ..., 17}. (So, in hindsight, the sorting is useless.)

a) What is the asymptotic running time of insertion sort in this case?

b) What is the asymptotic running time of selection sort in this case?

c) What is the asymptotic running time of merge sort in this case?

d) What is the asymptotic running time of quick sort in this case?