**ADS HOMEWORK 6.2**

C) (BONUS)

As the lengths of the input sequences gets larger, one can observe that the heap sort variant of sub-problem “B” performs faster than the original heap sort. This is because the element swapped to become the new root would float down to leaf level in most cases and so not using max-heapify and always floating the new root to leaf level saves additional tests that would have occurred if we used max-heapify. The moving up (in the heap sort variant) is a rare case so it won’t make that much difference. This makes for faster running time of the heap sort variant as compared to the original heap sort algorithm.