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Project 1 Written Questions

1)
r20k 367486 0 100416650 0
r40k 798416 0 398333506 1
r60k 1284701 0 901168796 2
r80k 1765967 0 1603010026 3
r100k 2208929 0 2511601491 5
as20k 21813040 0 258290 0
as40k 194604235 0 334832 0
as60k 211977030 0 556184 0
as80k 274815677 0 1086388 0
as100k 366844751 0 2094457 0

2) Quicksort Performs faster for randomly generated data, and insertion sort performs faster for almost sorted data. Quicksort should always be used on data that's random and completely out of order, and insertion sort should be implemented when the data is nearly sorted.

3) For randomly generated data, a random pivot scheme would be quicker than always selecting the first element as a pivot. For almost sorted data, quicksort would be the same or even slower with a random pivot scheme.

4) If all elements of the array have the same value, running time will be worst case O(N^2)