Testing Document

* All times posted are measured in nanoseconds (ns)

| Sorted Data | 100 | 1000 | 10000 | 100000 | 1000000 |
|---|---|---|---|---|---|
| Insertion Sort | 39384 | 421572 | 5132755 | 10401020 | 49492752 |
| Merge Sort | 188848 | 6467051 | 36066703 | 108948066 | 368726569 |
| Heap Sort | 473160 | 12006263 | 24073234 | 54973177 | 403578431 |
| Quick Sort | 160504 | 623307 | 12453893 | 107818586 | 216619192 |

| Unsorted Data | 100 | 1000 | 10000 | 100000 | 1000000 |
|---|---|---|---|---|---|
| Insertion Sort | 794822 | 31706320 | 169983345 | 46798922835 | 7172778630209 |
| Merge Sort | 251768 | 1923134 | 49297867 | 147131703 | 862696028 |
| Heap Sort | 474310 | 2850247 | 29926792 | 115542865 | 1497580391 |
| Quick Sort | 236752 | 813093 | 18271927 | 71913872 | 647567827 |

Insertion sort:
      Best case: $n$
      Worst case: $n^2$
      Expected case: $n^2$

Merge sort:
      Best case: $n \lg n$
      Worst case: $n \lg n$
      Expected case: $n \lg n$

Heap sort:
      Best case: $n \lg n$
      Worst case: $n \lg n$
      Expected case: $n \lg n$

Quick sort:
      Best case: $n \lg n$
      Worst case: $n^2$
      Expected case: $n \lg n$