



The graph above shows the running time of the algorithm in nanoseconds. Each point on the graph represents the size integers the user had given starting a  $n = 3$ . Working all the way up to  $n = 8$ . Looking at the first two groups, we can concur that the the issue in terms of the order of the input doesn't effect the running time the algorithm. As the difference between the two is just some extra time for sorting the array list. How ever when looking at in input that houses several duplicates, there is a clear indication of runtime increase as  $n$  gets larger and larger. Showing the run time to be  $\theta(n^3)$ . Which isn't terrible, but it could defiantly be faster if I sort it earlier as well as if I found a way that didn't go through 3 for loops.