

5. From the Chart, we can conclude that selection sort is the fastest.

6. Bubble sort has a complexity  $O(n^2)$ . Bubble sort grows exponentially as the array size increases. This shows that bubble sort is the worst complexity out of the three.

Insertion sort has a best case complexity of  $O(n)$  and worst case of  $O(n^2)$ . It seems like in this case the array has been sorted more as the array is randomly generated. We can see from 500 to 600 the growth is massive. However, from 600 to 700 the growth is not as big as 500 to 600. This shows that the array could be sorted more in 700 compared to 600.

Selection sort has a complexity  $O(n^2)$  in all cases as it goes through all the elements in the array before sorting it. It is expected that the result of selection sort would be similar to insertion sort. However, compared to bubble sort, the difference is pretty big. A possible explanation would be that bubble sort is less efficient if the array is less sorted.