Extra Credit 2.

Implement two functions named *quick_sort* and *insertion_sort*.

Note: Please use median-of-three to find your pivot in your QuickSort.

1. Request the user to enter a positive integer, and call it **n**. (n = 1000)
2. Generate **n** random integers between *-5000* to *5000* and save them in array **a**.
3. Call *quick_sort* and *insertion_sort* functions to sort the array.
4. Repeat steps 2 and 3 for *100* times to determine the **average-running time** of each function.
5. Print the end/finish time for your function. (**Note:** to be more precise, the time to generate a random array in each iteration should be excluded from the result)
6. Calculate the growth of each function. (On a scratch paper!)
7. **Write a code** to calculate how many instructions your machine/laptop can run in **a second** using step 5 and 6 using the *insertion_sort*.