

# Runtime Analysis

	doublerAppend - push	doublerInsert - unshift
tinyArray	154.479 $\mu$ s	66.112 $\mu$ s
smallArray	217.175 $\mu$ s	97.511 $\mu$ s
mediumArray	281.993 $\mu$ s	316.177 $\mu$ s
largeArray	1.294062 ms	21.514483 ms
extraLargeArray	6.061099 ms	2.058856277 s

## HOW DOES EACH FUNCTION “SCALE”?

**doubleAppend** scales linearly because it only relies on the length of the array passed to it

**doubleInsert** scales quadratically because it uses unshift, this means that for every element in the array passed as argument it will re-arrange all the elements in the **new\_nums** array essentially doubling the workload.

## WHICH OF THE TWO FUNCTIONS SCALES BETTER? HOW CAN YOU TELL?

**doubleAppend** scales better because it has a time complexity of  **$O(n)$**  while **doubleInsert** has a time complexity of  **$O(n^2)$**