# ICA 1

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## 1 (measure)

$O(n^2)$

The for loop that is first introduced runs in linear time. Inside the for loop there is another for loop. The k for loop takes n time as well thus resulting in quadratic time.

## 2 (addElement)

$O(1)$

Appending an element in a list is constant time. We are also assuming that the printing of a list is constant time. Therefore, the function runs in constant time.

## 3 (addOnesToTestList)

$O(n)$

Given that the print function is a constant time operation, we will iterate through the range of 0, num. This causes a run time of linear time n. Inside the linear time we append to the list, which again is constant time. Therefore, the total run time of linear time.

## 4 (someMethod)

$O(n^2)$

Given that the print function is a constant time operation, we have the first for loop going through the array (linear time). For each iteration we go through a for loop again. Thus quadratic time.

## 5 (searchTarget)

$O(n^3)$

Given that the range variables are proportional in size to n, we go through range 1 and for each element of range 1 we iterate through range 2 and for every iteratino of range 2 we iterate through range 3, which is 3 nested for loops causing a cubic time runtime.

## 6 (someSearch)

$O(logn)$

This is binary search.