Marinel Tinnirello
09/20/2019
CMPT 435 - Assignment #3

1) n log n, (1 / n), sqrt(n), n, 2^n, 3^n, 2^{n+1}, $2^{(2^n)}$
2) for (i = 1; i <= n; i++) // n
   p = pow(i, k) // $2^{\log n}$
   for (j = 1; j <= p; j++) // n
   Some O(1) work // 1
   end for
   end for
   O(n) = n^{k+1}
3)
   a) If the new element is inserted in the front or the middle, the O(n) = n (linear time), because it relates to the number of elements accounted for in n. If the new element is inserted in the end, the O(n) = 1 (constant time), because the statement is simple and input size doesn't matter.
   b) In a sorted array, the O(n) = n (linear time), because we need to keep the order of the elements, so in the worst case, we might need to move all the elements.