Swap Permutation

You are given an array \( A = [1, 2, 3, \ldots, n] \):

1. How many sequences \( (S_1) \) can you get after exact \( k \) adjacent swaps on \( A \)?
2. How many sequences \( (S_2) \) can you get after at most \( k \) swaps on \( A \)?

An adjacent swap can be made between two elements of the Array \( A \), \( A[i] \) and \( A[i+1] \) or \( A[i] \) and \( A[i-1] \). A swap otherwise can be between any two elements of the array \( A[i] \) and \( A[j] \) \( \forall 1 \leq i, j \leq N, i \neq j \).

**Input Format**

First and only line contains \( n \) and \( k \) separated by space.

**Constraints**

\( 1 \leq n \leq 2500 \)
\( 1 \leq k \leq 2500 \)

**Output Format**

Output \( S_1 \% \text{ MOD} \) and \( S_2 \% \text{ MOD} \) in one line, where \( \text{ MOD} = 1000000007 \).

**Sample Input**

```
3 2
```

**Sample Output**

```
3 6
```

**Explanation**

Original array: \( [1, 2, 3] \)

1. After 2 adjacent swaps:
   We can get \( [1, 2, 3], [2, 3, 1], [3, 1, 2] \) \( \implies S_1 = 3 \)

2. After at most 2 swaps:
   1) After 0 swap: \( [1, 2, 3] \)
   2) After 1 swap: \( [2, 1, 3], [3, 2, 1], [1, 3, 2] \).
   3) After 2 swaps: \( [1, 2, 3], [2, 3, 1], [3, 1, 2] \)

\( \implies S_2 = 6 \)