A Math Contest P8 - Permutation Counting

Time limit: 1.0s   **Memory limit:** 512M

Calculate the number of permutations of the first N positive integers which can be sorted by performing exactly K swaps of adjacent elements.

Constraints

$2 \leq N \leq 3\,000$

$0 \leq K \leq 3\,000$

Input Specification

The only line contains two space-separated integers, N and K.

Output Specification

Output the number of permutations of the first N positive integers which can be sorted by performing exactly K adjacent swaps. Since this value may be large, output it modulo $10^9 + 7$.

Sample Input

```
3 3
```

Sample Output

```
3
```

Explanation for Sample

The permutations of $[1, 2, 3]$ which can be sorted by performing exactly 3 adjacent swaps are $[2, 1, 3]$, $[1, 3, 2]$ and $[3, 2, 1]$.