5092 - Permutation Counting

Asia - Harbin - 2010/2011

Given a permutation $a_1, a_2,...a_N$ of {1, 2,..., N}, we define its E-value as the amount of elements where $a_i > i$. For example, the E-value of permutation {1, 3, 2, 4} is 1, while the E-value of {4, 3, 2, 1} is 2. You are requested to find how many permutations of {1, 2,..., N} whose E-value is exactly k.

Input

There are several test cases, and one line for each case, which contains two integers, N and k. ($1 \leq N \leq 1000$, $0 \leq k \leq N$).

Output

Output one line for each case. For the answer may be quite huge, you need to output the answer module 1,000,000,007.

Explanation for the sample:

There is only one permutation with E-value 0: {1, 2, 3}, and there are four permutations with E-value 1: {1, 3, 2}, {2, 1, 3}, {3, 1, 2}, {3, 2, 1}

Sample Input

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30
31
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Sample Output

```
1
4
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