E. Different Subsets For All Tuples

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

For a sequence a of n integers between 1 and m, inclusive, denote $f(a)$ as the number of distinct subsequences of a (including the empty subsequence).

You are given two positive integers n and m. Let S be the set of all sequences of length n consisting of numbers from 1 to m. Compute the sum $f(a)$ over all a in S modulo $10^9 + 7$.

Input

The only line contains two integers n and m ($1 \le n, m \le 10^6$) — the number of elements in arrays and the upper bound for elements.

Output

Print the only integer c — the desired sum modulo $10^9 + 7$.

Examples

input
1 3
output
6

input
2 2
output
14

input
3 3
output
174