H. Final Match

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

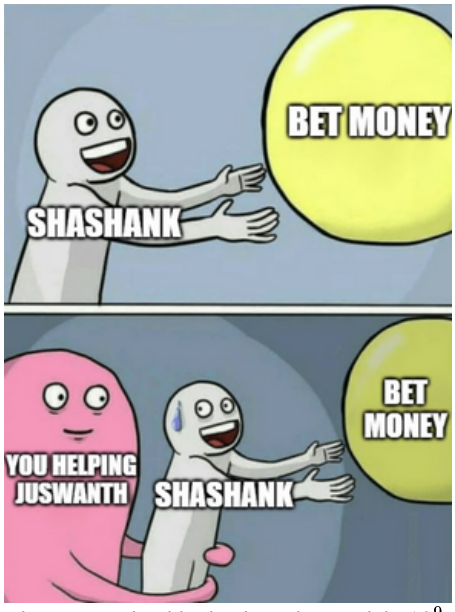
The final match of the CPL 2023 has arrived, and as a result, ticket prices have been elevated. Juswanth and Shashank purchased tickets online and were waiting for the game to begin at the stadium.

They were bored, so they decided to play a short bet game with a bet as the ticket price. Juswanth wins if he solves the problem given by Shashank. Otherwise, he loses. Shashank gives Juswanth two integers n and k and asks Juswanth to create a set of characters S by choosing k different characters(possibly from different languages) and compute the number of strings that satisfy the following properties.

1. The length of the string is n
2. The string must be a **magical palindrome**.
3. Each character in the string must be present in S. In other words, if 'z' is a character of the string, then 'z' must be present in the set S as well

A **magical palindrome** is a string that reads the same forward and backward, either directly or in any rotation of the string. For instance, "dedcbaabc" is a magical palindrome because if the last three letters at the end of the string are rotated to the beginning of the string, it becomes "abcdedcba"

The match has begun surprisingly, and Juswanth can't hold his excitement to watch it. So he wants you to solve the problem.



As the result can be very large, you should print the value modulo $10^9 + 7$ (the remainder when divided by $10^9 + 7$).

Input

The first and the only line of input consists of two integers $n(1 \le n \le 10^9)$ and $k(1 \le k \le 10^9)$

Output

Print the number of the strings that satisfy the conditions for given n and k values mentioned above modulo $10^9 + 7$

Examples

input	Copy
4 2	

output	Copy
6	

input	Copy
1 9	

output	Copy
9	

input	Copy
6 3	

output	Copy
75	

Note

In the first case, k = 2 so let's assume the set S of 2 different characters created by you is {a,b} and length of string is 4 so all the strings that satisfy the given conditions are "aaaa", "abba" "aabb" "bbaa" "baab" "bbbb". So the answer is 6.

In the second test case, K = 9, so let's assume the set S of 9 different characters created by you is {a,b,c,d,e,f,g,h,i} so all the strings which satisfy the given conditions are "a", "b", "c", "d", "e", "f", "g", "h", "i"