A LITTLE TREAT

In the last ACM-ICPC Regional Contest in Thailand, University of Science and Technology - The University of Danang did so well, getting their record place in a regional contest. Coach Tuan was so proud of his students and decided to give them a little treat: he let his *N* students choose their most favourite candy and then he paid for them. There were *M* types of candy.

However, candies were sold in boxes, each had exactly *K* candies of the same kind. Coach Tuan thought that it would be a great selection if for every kind of candy, the number of students choosing it was a multiple of *K*. Your task is to count the number of ways his students could choose candies to form a great selection. Two selections are considered different if there exists some student who selects differently.

Input

The input consists of 3 space-separated integers *N*, *M*, *K* ($1 \leq N \leq 10^9$, $1 \leq M \leq 1000$, $1 \leq K \leq 4$).

Output

You should print the number of great selections modulo 10^9+7.

Examples

Standard Input	Standard Output
6 2 3	22
4 3 2	21
5 4 1	1024

Explanation

With *N*=6, *M*=2, *K*=3 there are 22 great selections:

(1,1,1,1,1,1)

(2,2,2,2,2,2)

(1,1,1,2,2,2)

(1,1,2,1,2,2)

(1,1,2,2,1,2)

(1,1,2,2,2,1)

(1,2,1,1,2,2)

(1,2,1,2,1,2)

(1,2,1,2,2,1)

(1,2,2,1,1,2)

(1,2,2,1,2,1)

(1,2,2,2,1,1)

(2,1,1,1,2,2)

(2,1,1,2,1,2)

(2,1,1,2,2,1)

(2,1,2,1,1,2)

(2,1,2,1,2,1)

(2,1,2,2,1,1)

(2,2,1,1,1,2)

(2,2,1,1,2,1)

(2,2,1,2,1,1)

(2,2,2,1,1,1)