D. Number of Binominal Coefficients

time limit per test: 4 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

For a given prime integer p and integers α, A calculate the number of pairs of integers (n, k), such that $0 \le k \le n \le A$ and is divisible by p^{α}.

As the answer can be rather large, print the remainder of the answer moduly $10^9 + 7$.

Let us remind you that is the number of ways k objects can be chosen from the set of n objects.

Input

The first line contains two integers, p and α ($1 \le p, \alpha \le 10^9$, p is prime).

The second line contains the decimal record of integer A ($0 \le A < 10^{1000}$) without leading zeroes.

Output

In the single line print the answer to the problem.

Examples

input
2 2 7
output
3

input
3 1 9
output
17

input
3 3 9
output
0

input
2 4 5000
output
8576851

Note

In the first sample three binominal coefficients divisible by 4 are , and .