Problem B. Chromatic Number

Input file:	stdin
Output file:	stdout
Time limit:	1 second
Memory limit:	512 megabytes

bobo has a **connected** graph G, and he wants to color each vertices with one of the c colors so that no two adjacent vertices share the same color.

Find the number of ways to color modulo $(10^9 + 7)$.

Input

The first line contains 3 integers n, m, c, which denote the number of vertices, edges, and colors, respectively ($1 \le n \le 10^5, n - 1 \le m \le n + 8, 1 \le c \le 10^9$).

The vertices are conveniently numbered by $1, 2, \ldots, n$.

Each of the following m lines contains 2 integers a_i, b_i, which denotes an edge between vertices a_i and b_i ($1 \le a_i, b_i \le n, a_i \ne b_i$).

Output

A single integer denotes the number of ways.

Sample input and output

stdin	stdout
3 3 3 1 2 2 3 3 1	6
4 3 1000000000 1 2 2 3 3 4	3584