Problem K. Knowledge-Oriented Problem

Input file:	*standard input*
Output file:	*standard output*
Time limit:	5 seconds
Memory limit:	512 mebibytes

After gaining a lot of knowledge, you decided to write a knowledge-oriented problem.

You are given an undirected graph G with n vertices and m edges. You copy it k times and denote the copies by $G_1, G_2, \ldots, G_k$. You add edges between vertex u in copy G_i and the same vertex u in copy G_{i+1} for all $1 \le i \le k-1$ and $1 \le u \le n$.

Find the number of spanning trees of the new graph. The answer can be large, so output it modulo $10^9 + 7$.

Input

The first line contains three integers n, m, k ($1 \le n \le 500$, $0 \le m \le \frac{n(n-1)}{2}$, $1 \le k \le 10^{18}$).

Each of the following m lines contains two integers u, v ($1 \le u, v \le n$, $u \ne v$) indicating an undirected edge (u, v) in the graph. All edges are distinct.

Output

Output one integer: the answer.

Examples

standard input	standard output
5 6 2 3 2 5 1 3 4 2 4 5 3 1 3	4725
2 1 200 1 2	272581704
5 10 1000000000000000000 1 2 1 3 1 4 1 5 2 3 2 4 2 5 3 4 3 5 4 5	569698435