Problem F. Fast as Ryser

Input file:	*standard input*
Output file:	*standard output*
Time limit:	4 seconds
Memory limit:	512 mebibytes

After reading the paper *Counting Perfect Matchings as Fast as Ryser*, you learned how to count the number of perfect matchings in a general graph in $O(2^n n^2)$. So you decided to write this problem to encourage people to read the paper and learn new technology.

You are given an undirected graph with n vertices and m edges, and also a constant c. We define the weight of an edge set S as follows:

- If there are two edges in set S sharing common vertices, the weight is 0.
- Otherwise, the weight is $c^{|S|}$. Note that the weight of an empty set is 1.

Compute the sum of the weight of all subsets of edges. The answer can be large, so output it modulo $10^9 + 7$.

Input

The first line contains three integers n, m, c ($1 \le n \le 36$, $0 \le m \le \frac{n(n-1)}{2}$, $1 \le c \le 10^9 + 6$).

Each line 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
6 10 100 3 6 1 3 2 4 3 4 4 6 1 2 4 5 2 3 1 4 3 5	2171001
8 11 818466928 6 7 3 6 6 5 7 3 6 2 8 1 1 7 4 3 5 1 6 1 6 4	425176360