Problem H
Organizing the Organization

Input: Standard Input
Output: Standard Output
Time Limit: 2 Second

I am the chief of the Personnel Division of a moderate-sized company that wishes to remain anonymous, and I am currently facing a small problem for which I need a skilled programmer's help.
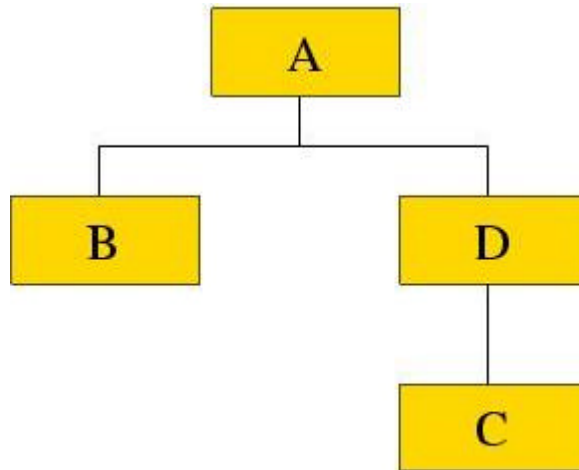

Figure 1: Example organisation

Currently, our company is divided into several more or less independent divisions. In order to make our business more efficient, these need to be organised in a hierarchy, indicating which divisions are in charge of other divisions. For instance, if there are four divisions A, B, C and D we could organise them as in Figure 1, with division A controlling divisions B and D, and division D controlling division C.

One of the divisions is Central Management (division A in the figure above), and should of course be at the top of the hierarchy, but the relative importance of the remaining divisions is not determined, so in Figure 1 above, division C and D could equally well have switched places so that C was in charge over division D. One complication, however, is that it may be impossible to get some divisions to cooperate with each other, and in such a case, neither of these divisions can be directly in charge of the other. For instance, if in the example above A and D are unable to cooperate, Figure 1 is not a valid way to organise the company.

In general, there can of course be many different ways to organise the organisation, and thus it is desirable to find the best one (for instance, it is not a good idea to let the programming people be in charge of the marketing people). This job, however, is way too complicated for you, and your job is simply to help us find out how much to pay the consultant that we hire to find the best organisation for us. In order to determine the consultant's pay, we need to find out exactly how difficult the task is, which is why you have to count exactly *how many* different ways there are to organise the organisation.

Oh, and I need the answer in five hours.

Input

The input consists of a series of test cases, at most **50**, terminated by end-of-file. Each test cases begins with three integers **n, m, k** ($1 \le n \le 50, 1 \le m \le n, 0 \le k \le 1500$). **n** denotes the number of divisions in the company (for convenience, the divisions are numbered from **1** to **n**), and **m** indicates which division is the Central Management division. This is followed by **k** lines, each containing two integers $1 \le i, j \le n$, indicating that division **i** and division **j** cannot cooperate (thus, **i** cannot be directly in charge of **j** and **j** cannot be directly in charge of **i**). You may assume that **i** and **j** are always different.
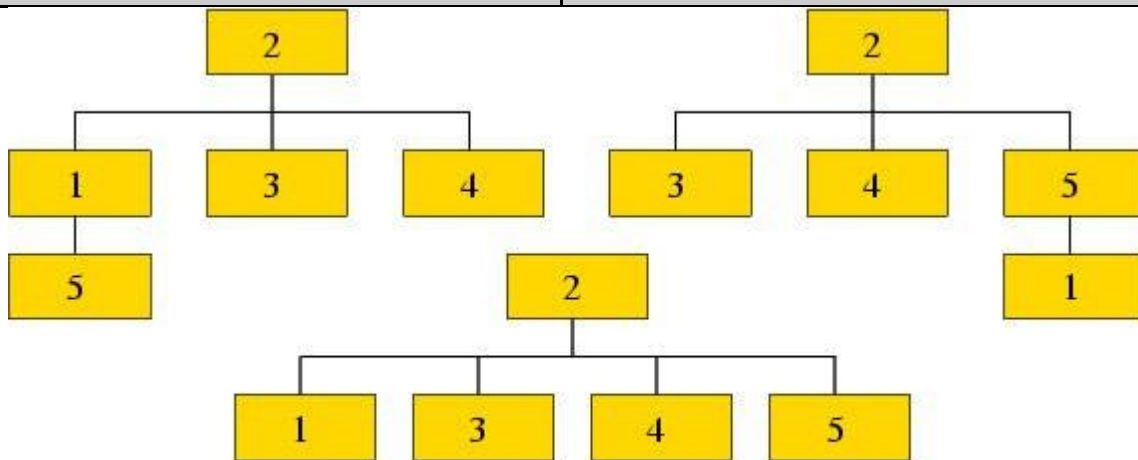
Output

For each test case, print the number of possible ways to organise the company on a line by itself. This number will be at least **1** and at most 10^{15}.

Sample Input

```
5 5 2
3 1
3 4
4 5
1 4
5 3
4 1 1
1 4
3 0 2
```

Output for Sample Input

```
3
8
3
```


The three possible hierarchies in the first sample case

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