One-way ticket

Camp IT 2019, Day 3, Available memory 256 MB *01.09.2019 - 08.09.2019*

In one of the exotic countries globetrotter Piotr visited next, all the cities (numbered from 1 to N) are connected using the road network. There are N cities and M roads between them.

There are no roads starting and ending in the same city. Also, between any pair of the cities there is at most 1 road between them.

Currently, Piotr is in the city 1 and he wonders how many ways there are to make a tour starting there and visiting each city exactly once.

Help him and answer how many such paths there are.

City 1 and the final city in the path are also considered to be visited.

For instance, consider the following road network depicted on the Figure 1.

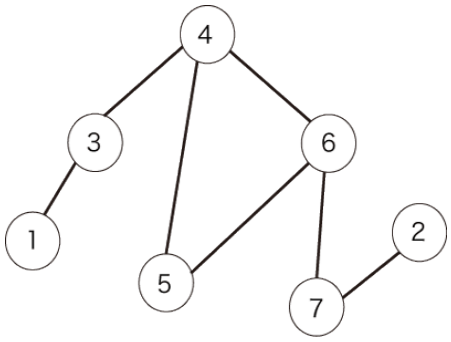


Figure 1: an example of the road network

A path depicted below satisfies all that Piotr wants to achieve.

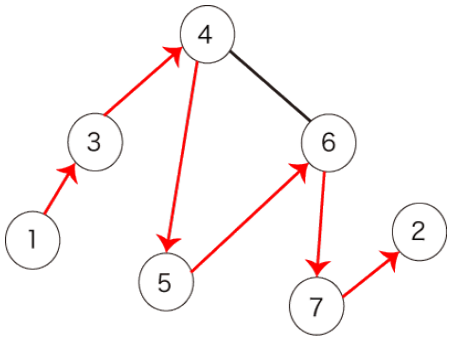


Figure 2: an example of a path satisfying the required conditions

However, the path shown in Figure 3 does not satisfy the given condition, since not all the cities are visited.

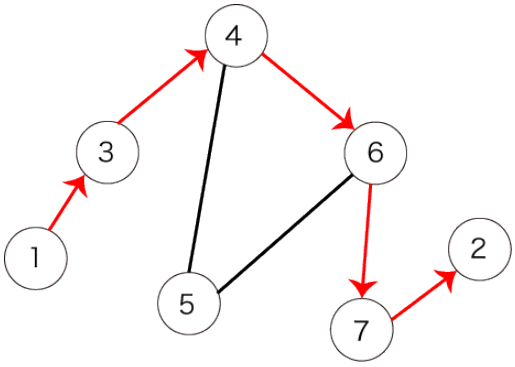


Figure 3: an example of a path not satisfying the required condition

Also, the following path depicted in Figure 4 doesn't meet the requirements, as it doesn't start from city 1.

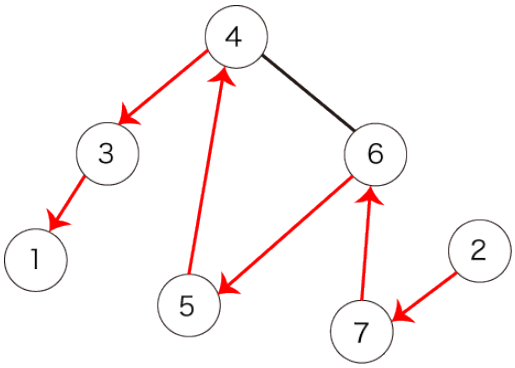


Figure 4: another example of a path not satisfying the required condition

Constraints

- $2 \leq N \leq 8$
- $0 \leq M \leq N(N-1)/2$
- $1 \leq a_i < b_i \leq N$
- The given road network contains neither returning paths nor double paths between pairs of cities.

Input

The input is given from Standard Input in the following format:

N M
a_1 b_1
a_2 b_2
:
a_M b_M

Output

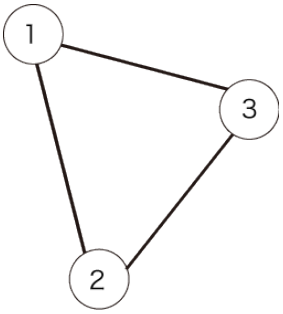
Print the number of the different tours starting in city 1 and visiting all the cities precisely once.

Example

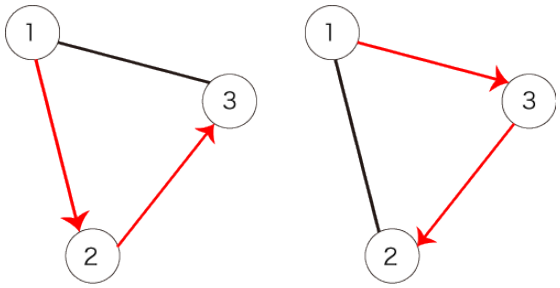
Input	Output
3 3 1 2 1 3 2 3	2
7 7 1 3 2 7 3 4 4 5 4 6 5 6 6 7	1

Notes

- Sample 1: The input describes the following road network:



With only these paths fulfiling the required condition:



- Sample 2: The path for this test case have already been drawn on Figure 2.