

PROBLEMS

SUBMIT

STATUS

STANDINGS

CUSTOM TEST

### E. Sandy and Nuts

time limit per test: 3 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

*Rooted tree* is a connected graph without any simple cycles with one vertex selected as a root. In this problem the vertex number 1 will always serve as a root.

*Lowest common ancestor* of two vertices  $u$  and  $v$  is the farthest from the root vertex that lies on both the path from  $u$  to the root and on path from  $v$  to the root. We will denote it as  $LCA(u, v)$ .

Sandy had a rooted tree consisting of  $n$  vertices that she used to store her nuts. Unfortunately, the underwater storm broke her tree and she doesn't remember all it's edges. She only managed to restore  $m$  edges of the initial tree and  $q$  triples  $a_i, b_i$  and  $c_i$ , for which she supposes  $LCA(a_i, b_i) = c_i$ .

Help Sandy count the number of trees of size  $n$  with vertex 1 as a root, that match all the information she remembered. If she made a mess and there are no such trees then print 0. Two rooted trees are considered to be distinct if there exists an edge that occur in one of them and doesn't occur in the other one.

#### Input

The first line of the input contains three integers  $n, m$  and  $q$  ( $1 \leq n \leq 13, 0 \leq m < n, 0 \leq q \leq 100$ ) — the number of vertices, the number of edges and  $LCA$  triples remembered by Sandy respectively.

Each of the next  $m$  lines contains two integers  $u_i$  and  $v_i$  ( $1 \leq u_i, v_i \leq n, u_i \neq v_i$ ) — the numbers of vertices connected by the  $i$ -th edge. It's guaranteed that this set of edges is a subset of edges of some tree.

The last  $q$  lines contain the triplets of numbers  $a_i, b_i, c_i$  ( $1 \leq a_i, b_i, c_i \leq n$ ). Each of these triples define  $LCA(a_i, b_i) = c_i$ . It's **not guaranteed** that there exists a tree that satisfy all the given  $LCA$  conditions.

#### Output

Print a single integer — the number of trees of size  $n$  that satisfy all the conditions.

#### Examples

input	Copy
4 0 0	
output	Copy
16	
input	Copy
4 0 1 3 4 2	
output	Copy
1	
input	Copy
3 1 0 1 2	
output	Copy
2	
input	Copy

#### Codeforces Round #332 (Div. 2)

Finished

Practice



#### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

#### → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

#### → Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

#### → Problem tags

bitmasks dp

No tag edit access

#### → Contest materials

- Tutorial

```
3 0 2
2 3 2
2 3 1
```

output

Copy

0

input

Copy

```
4 1 2
1 2
2 2 2
3 4 2
```

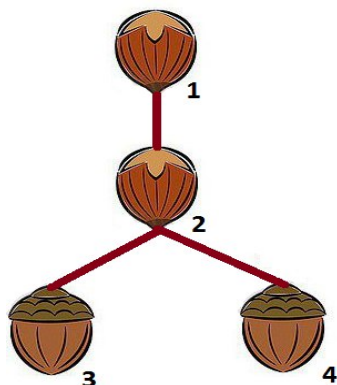
output

Copy

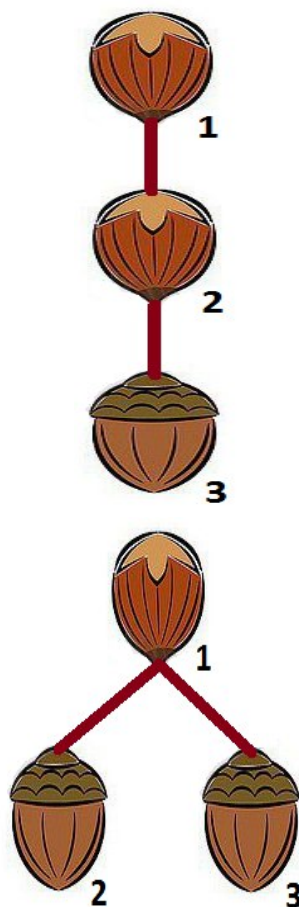
1

**Note**

In the second sample correct answer looks like this:



In the third sample there are two possible trees:



In the fourth sample the answer is 0 because the information about *LCA* is inconsistent.

The only programming contests Web 2.0 platform

Server time: Oct/29/2018 09:16:12<sup>UTC+8</sup> (f1).

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