## COCI '06 Contest 3 #5 Bicikli

**Time limit:** 0.6s **Memory limit:** 32M

A bicycle race is being organized in a land far, far away. There are N towns in the land, numbered 1 through N. There are also M one-way roads between the towns. The race will start in town 1 and end in town 2.

How many different ways can the route be set? Two routes are considered different if they do not use the exact same roads.

#### **Input Specification**

The first line of input contains two integers N and M ( $1 \le N \le 10\,000, 1 \le M \le 100\,000$ ), the number of towns and roads.

Each of the next M lines contains two different integers A and B, representing a road between towns A and B.

Towns may be connected by more than one road.

#### **Output Specification**

Output the number of distinct routes that can be set on a single line. If that number has more than nine digits, output only the last nine digits of the number. If there are infinitely many routes, output inf.

### Sample Input 1

6 7

1 3

1 4

3 2

4 2

5 6

## **Sample Output 1**

3

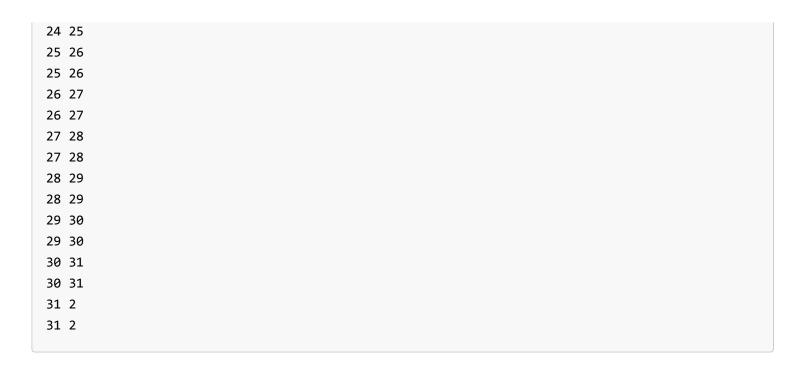
### Sample Input 2

6 8			
1 3			
1 4			
3 2			
4 2			
5 6			
6 5			
3 4			
4 3			

# **Sample Output 2**

inf

# Sample Input 3



## **Sample Output 3**

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