

# D. Mr. Kitayuta's Technology

time limit per test: 1 second  
memory limit per test: 256 megabytes  
input: standard input  
output: standard output

Shuseki Kingdom is the world's leading nation for innovation and technology. There are  $n$  cities in the kingdom, numbered from 1 to  $n$ .

Thanks to Mr. Kitayuta's research, it has finally become possible to construct teleportation pipes between two cities. A teleportation pipe will connect two cities unidirectionally, that is, a teleportation pipe from city  $x$  to city  $y$  cannot be used to travel from city  $y$  to city  $x$ . The transportation within each city is extremely developed, therefore if a pipe from city  $x$  to city  $y$  and a pipe from city  $y$  to city  $z$  are both constructed, people will be able to travel from city  $x$  to city  $z$  instantly.

Mr. Kitayuta is also involved in national politics. He considers that the transportation between the  $m$  pairs of city  $(a_i, b_i)$  ( $1 \leq i \leq m$ ) is important. He is planning to construct teleportation pipes so that for each important pair  $(a_i, b_i)$ , it will be possible to travel from city  $a_i$  to city  $b_i$  by using one or more teleportation pipes (but not necessarily from city  $b_i$  to city  $a_i$ ). Find the minimum number of teleportation pipes that need to be constructed. So far, no teleportation pipe has been constructed, and there is no other effective transportation between cities.

## Input

The first line contains two space-separated integers  $n$  and  $m$  ( $2 \leq n \leq 10^5, 1 \leq m \leq 10^5$ ), denoting the number of the cities in Shuseki Kingdom and the number of the important pairs, respectively.

The following  $m$  lines describe the important pairs. The  $i$ -th of them ( $1 \leq i \leq m$ ) contains two space-separated integers  $a_i$  and  $b_i$  ( $1 \leq a_i, b_i \leq n, a_i \neq b_i$ ), denoting that it must be possible to travel from city  $a_i$  to city  $b_i$  by using one or more teleportation pipes (but not necessarily from city  $b_i$  to city  $a_i$ ). It is guaranteed that all pairs  $(a_i, b_i)$  are distinct.

## Output

Print the minimum required number of teleportation pipes to fulfill Mr. Kitayuta's purpose.

## Examples

input
4 5 1 2 1 3 1 4 2 3 2 4
output
3

input
4 6 1 2 1 4 2 3 2 4 3 2 3 4
output
4

## Note

For the first sample, one of the optimal ways to construct pipes is shown in the image below:

For the second sample, one of the optimal ways is shown below: