

Fast Maximum Matching

[English](#)

[Vietnamese](#)

FJ has N ($1 \leq N \leq 50,000$) cows and M ($1 \leq M \leq 50,000$) bulls. Given a list of P ($1 \leq P \leq 150,000$) potential matches between a cow and a bull, compute the greatest number of pairs that can be matched. Of course, a cow can be matched to at most one bull, and vice versa.

Input

The first line contains three integers, N , M , and P . Each of the next P lines contains two integers A ($1 \leq A \leq N$) and B ($1 \leq B \leq M$), denoting that cow A can be matched with bull B .

Output

Print a single integer that is the maximum number of pairs that can be obtained.

Example

Input:

```
5 4 6
5 2
1 2
4 3
3 1
2 2
4 4
```

Output:

```
3
```

Cow 1 can be matched to bull 2, cow 3 to bull 1, and cow 4 to bull 3.

Original problem: <https://www.spoj.com/problems/MATCHING/>.