Seating Arrangement

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

Boarding is going to start. An aircraft has n rows and m seats in each row. The seat number 1 is located by the window and the seat number m is located by the aisle.

You are given the order of passengers entering the aircraft and the seat number of each passenger. If a passenger wants to take his seat number x, but in any place from the aisle to his seat another passenger has already been seated (let it be seat number y), then the passenger at y should stand up and let other passenger pass.

There are k passenger, and they get in the aircraft one by one starting from 1. Your task is to calculate how many times did passengers stand up in total.

Input

The first line contains three integers n, m and k ($1 \le n \le 10^9$, $1 \le m \le 10^9$, $1 \le k \le 10^5$) — the number of rows, the number of seats in each row and the number of passengers, respectively. It is guaranteed that the number of passengers is not greater than $n \cdot m$.

Each of the next k lines contains two integers x and y ($1 \le x \le n, 1 \le y \le m$) — the row number and the seat number, where current passenger should sit down.

It is guaranteed that each passenger has his own unique seat.

Output

Print a single integer — how many times did passengers stand up in total.

Scoring

Subtask	Score	Constraints	Required subtasks
0	0	Sample tests	—
1	15	$1 \le n \le 100$ $m = 3$	—
2	15	$1 \le n \le 100$ $1 \le m \le 100$	1
3	20	$1 \le n \le 10^9$ $1 \le m \le 100$	1, 2
4	25	$1 \le n \le 10^9$ $1 \le m \le 10^5$	1, 2, 3
5	25	No additional constraints	1, 2, 3, 4

Examples

standard input	standard output
1 2 2 1 2 1 1	1
1 2 2 1 1 1 2	0
2 2 2 1 2 2 1	0
2 3 5 1 3 2 2 2 3 1 1 2 1	3
3 3 9 1 3 1 2 1 1 2 2 2 1 2 3 3 1 3 3 3 2	5