B. Jzzhu and Cities

time limit per test: 2 seconds

memory limit per test: 256 megabytes

Jzzhu is the president of country A. There are n cities numbered from 1 to n in his country. City 1 is the capital of A. Also there are m roads connecting the cities. One can go from city u_i to v_i (and vise versa) using the i-th road, the length of this road is x_i. Finally, there are k train routes in the country. One can use the i-th train route to go from capital of the country to city s_i (and vise versa), the length of this route is y_i.

Jzzhu doesn't want to waste the money of the country, so he is going to close some of the train routes. Please tell Jzzhu the maximum number of the train routes which can be closed under the following condition: the length of the shortest path from every city to the capital mustn't change.

Input

The first line contains three integers n, m, k ($2 \le n \le 10^5$; $1 \le m \le 3 \cdot 10^5$; $1 \le k \le 10^5$).

Each of the next m lines contains three integers u_i, v_i, x_i ($1 \le u_i, v_i \le n$; $u_i \ne v_i$; $1 \le x_i \le 10^9$).

Each of the next k lines contains two integers s_i and y_i ($2 \le s_i \le n$; $1 \le y_i \le 10^9$).

It is guaranteed that there is at least one way from every city to the capital. Note, that there can be multiple roads between two cities. Also, there can be multiple routes going to the same city from the capital.

Output

Output a single integer representing the maximum number of the train routes which can be closed.

Examples

input	Copy
5 5 3 1 2 1 2 3 2 1 3 3 3 4 4 1 5 5 3 5 4 5 5 5	

output	Copy
2	

input	Copy
2 2 3 1 2 2 2 1 3 2 1 2 2 2 3	

output	Copy
2	

→ **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 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++20 13.2 (64 bit, win ⌄]

Choose file: [Choose File] No file chosen

[Submit]

→ **Last submissions**

Submission	Time	Verdict
302233090	Jan/21/2025 16:36	Accepted
302165611	Jan/21/2025 06:04	Wrong answer on test 4
302165533	Jan/21/2025 06:03	Wrong answer on test 4

→ **Problem tags**

graphs   greedy   shortest paths   *2000

No tag edit access

→ **Contest materials**

- Codeforces Round #257 ✕
- Tutorial (en) ✕

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