

LKP '18 Contest 1 P4 - Fun in Föråg

Time limit: 1.0s **Memory limit:** 64M
Java: 1.8s

The transport system of the city of Föråg consists of N stations and M two-way trains connecting the stations, the i th of which takes c_i minutes to go from station a_i to station b_i or from station b_i to station a_i . Konajya is currently near station A after visiting the Förågian War Museum. However, she wants to go visit the Lastrevia cultural festival which is conveniently going to be held directly beside station B in C minutes. To use the Förågian transport system, Konajya must first buy a transport pass. There are M levels of passes, the i th of which gives access to the first i trains in the order given in the input statement. Help Konajya find the minimum level of the transport pass that she must buy to reach the cultural festival before it starts! (You may assume the time needed to get to the station and to buy the pass is negligible)

Constraints

In all subtasks,

$$1 \leq N \leq 100\,000$$

$$1 \leq M \leq 200\,000$$

$$1 \leq a_i, b_i, A, B \leq N$$

$$1 \leq c_i \leq 10^6$$

$$1 \leq C \leq 10^{11}$$

Subtask 1 [15%]

$$1 \leq N, M \leq 2\,000$$

Subtask 2 [85%]

No additional constraints.

Input Specification

The first line will contain two integers, N and M .

M lines will follow. The i th of these will contain the integers a_i , b_i and c_i .

The last line will contain three more integers, A , B , and C .

Output Specification

Output the minimum level of the Förågian transport pass that Konajya must get so that she can get from station A to station B in less than C minutes. If this is not possible print `-1` instead.

Sample Input

```
4 4
1 4 10
1 2 3
3 4 2
2 3 1
1 4 9
```

Sample Output

```
4
```