JOI '17 Final P4 - Commuter Pass

Time limit: 1.0s **Memory limit:** 512M

JOI-kun is living in a city with N stations. The stations are numbered from 1 to N. There are M railways numbered from 1 to M. The railway i ($1 \leq i \leq M$) connects the station A_i and the station B_i in both directions, and the fare is C_i yen.

JOI-kun is living near the station S, and goes to the IOI high school near the station T. He is planning to buy a commuter pass connecting these two stations. When he buys a commuter pass, he needs to choose a route between the station S and the station T with minimum cost. Using this commuter pass, he can take any railway contained in a chosen route in any direction without additional costs.

JOI-kun often goes to bookstores near the station U and the station V. Therefore, he wants to buy a commuter pass so that the cost from the station U to the station V is minimized. When he moves from the station U to the station V, he first chooses a route from the station U to the station V. Then the fare he has to pay is

- 0 yen if the railway i is contained in a route chosen when he buys a commuter pass, or
- C_i yen if the railway i is not contained in a route chosen when he buys a commuter pass.

The sum of the above fare is the cost from the station U to the station V. He wants to know the minimum cost from the station U to the station V if he chooses a route appropriately when he buys a commuter pass.

Input Specification

The first line of input contains two space separated integers N, M. This means the city JOI-kun lives in has N stations and M railways.

The second line contains two space separated integers S, T ($S \neq T$). This means JOI-kun is planning to buy a commuter pass from the station S to the station T.

The third line contains two space separated integers U, V ($U \neq V$). This means JOI-kun wants to minimize the cost from the station U to the station V.

Each of the following M lines contains three space separated integers A_i, B_i, C_i ($1 \leq A_i, B_i \leq N$, $1 \leq C_i \leq 10^9$). The railway i connects the station A_i and the station B_i in both directions, and the fare is C_i yen.

Output Specification

Write one line to the standard output. The output should contain the minimum cost from the station U to the station V if he chooses a route appropriately when he buys a commuter pass.

Constraints

In all test cases, $1 \leq N \leq 10^5$, $1 \leq M \leq 2 \times 10^5$, $S \neq U$ or $T \neq V$.

In 16% test cases, $S = U$.

In another 15% test cases, there is a unique route with minimum cost from the station S to the station T.

In another 24% test cases, $N \leq 300$.

Sample Input 1

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

Sample Output 1

```
2
```

Sample Input 2

```
8 8
5 7
6 8
1 2 2
2 3 3
3 4 4
1 4 1
1 5 5
2 6 6
3 7 7
4 8 8
```

Sample Output 2

```
15
```