

There are n cities and m roads between them. Your task is to process q queries where you have to determine the length of the shortest route between two given cities.

Input Format

The first input line has three integers n , m and q : the number of cities, roads, and queries.
Then, there are m lines describing the roads. Each line has three integers a , b and c : there is a road between cities a and b whose length is c . All roads are two-way roads.
Finally, there are q lines describing the queries. Each line has two integers a and b : determine the length of the shortest route between cities a and b .

Output Format

Print the length of the shortest route for each query. If there is no route, print -1 instead.

Constraints

- $1 \leq n \leq 500$
- $1 \leq m \leq n^2$
- $1 \leq q \leq 10^5$
- $1 \leq a, b \leq n$
- $1 \leq c \leq 10^9$

Sample Input 1

Copy

```
4 3 5
1 2 5
1 3 9
2 3 3
1 2
2 1
1 3
1 4
3 2
```

Sample Output 1

Copy

```
5
5
8
-1
3
```

Sample Input 2

Copy

C++14[GCC]



Submit

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