Shortest Distance

HackerRank

Problem Statement

You'll be given a graph of N nodes and E edges. For each edge, you'll be given A, B and W which means there is an edge from A to B only and which will cost W.

Also, you'll be given Q queries, for each query you'll be given X and Y, where X is the source and Y is the destination. You need to print the minimum cost from X to Y for each query. If there is no connection between X and Y, print -1.

Note: There can be multiple edges from one node to another. Make sure you handle this one.

Input Format

- First line will contain N and E.
- Next E lines will contain A, B and W.
- After that you'll get Q.
- Next Q queries will contain X and Y.

Constraints

1. $1 \leq N \leq 100$
2. $1 \leq E \leq 10^5$
3. $1 \leq A, B \leq N$
4. $1 \leq W \leq 10^9$
5. $1 \leq Q \leq 10^5$
6. $1 \leq X, Y \leq N$

Output Format

- Output the minimum cost for each query.

Sample Input 0

```
4 7
1 2 10
2 3 5
3 4 2
4 2 3
3 1 7
2 1 1
1 4 4
6
1 2
4 1
3 1
1 4
```

```
2 4
4 2
```

Sample Output 0

```
7
4
6
4
5
3
```

Sample Input 1

```
4 4
1 2 4
2 3 4
3 1 2
1 2 10
6
1 2
2 1
1 3
3 1
2 3
3 2
```

Sample Output 1

```
4
6
8
2
4
6
```