Shortest Path

Given a weig›hted graph (a graph in which each edge has some weight), find the shortest path between two nodes.

(You may use adjacency matrix representation of graph)

Note: The graph is **directed**.

Input:
First Line of the input will contain ***Q*** representing the number of Queries to be asked on the given graph..
Second line of the Input will contain two space separated integers ***V*** and ***E*** representing ***Number of Vertices*** and ***Number of Edges*** respectively.
Next ***E*** lines will contain 3 space separated integers **A**, **B** and **W** representing an edge of weight W between the vertices A and B. E.g., 1 2 3 represents edge between 1 and 2 of weight 3.
Next **Q** lines will contain two space separated integers representing the nodes between which the shortest distance is to be found.

Vertices will be labeled starting from 1. For example if V=5, the set of vertices is {1,2,3,4,5}

Output:
Output a single integer ***N*** **for each test case representing the shortest path length.**
Output -1 if it is not possible to go from source node to the destination node.

Constraints:
$2 \leq \mathbf{V} \leq 1000$
$0 \leq \mathbf{E} \leq V*(V-1)$
$1 \leq \mathbf{Q} \leq 10$
$1 \leq \mathbf{A}, \mathbf{B} \leq V$
$0 \leq \mathbf{W} \leq 10000$

Sample Input

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

Sample Output:

```
4
-1
```

Explanation
On interpreting the input and constructing the graph we get:

All edges are of length 1 in this case:

```
[1]---->[2]
 | \    |
 |   \  |
[3]---->[4]
```

Shortest path from 3 to 2 is of length **2**: 3->1->2 or 3->4->2
Shortest path from 4 to 1 is of length **1**: 4->1