Problem K. Kangaroo On Graph

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 mebibytes

You are given a weighted directed graph consisting of n vertices and m edges, with vertices numbered from 1 to n and edges numbered from 1 to m. The j-th $(1 \le j \le m)$ edge goes from vertex u_j to vertex v_j $(u_j < v_j)$, and its weight is w_j.

Also, k triplets of integers are given. The i-th $(1 \le i \le k)$ triplet is (a_i, b_i, c_i) $(a_i < b_i < c_i)$.

Kangaroo starts at vertex 1 and goes to vertex n by repeatedly moving along an edge. In addition, for all i $(1 \le i \le k)$, if the kangaroo moves from vertex a_i to vertex b_i directly, then it must next move to a vertex other than vertex c_i.

Determine whether it is possible for the kangaroo to reach vertex n. If it is possible, also calculate the minimum sum of the weights of the edges on the kangaroo's path.

Input

The first line of input contains two integers n and m: the number of vertices and edges in the graph, respectively $(3 \le n \le 2 \cdot 10^5;\ 0 \le m \le 2 \cdot 10^5)$.

The j-th of the following m lines contains three integers, u_j, v_j, and w_j: the starting and the ending point of the i-th edge and its weight, respectively $(1 \le u_j < v_j \le n;\ (u_i, v_i) \ne (u_j, v_j)$ for $i \ne j;\ 1 \le w_j \le 10^9)$.

Then follows a line containing an integer k: the number of forbidden triples $(0 \le k \le 2 \cdot 10^5)$.

Each of the following k lines contains three integers: a_i, b_i, and c_i $(1 \le a_i < b_i < c_i \le n)$. You may assume that both edges (a_i, b_i) and (b_i, c_i) exist in the graph.

Output

If vertex n is unreachable, print -1. Otherwise, print the minimum sum of the weights of the edges on the kangaroo's path.

Examples

standard input	*standard output*
4 4 1 3 2 1 2 3 2 4 3 3 4 3 1 1 3 4	6
7 8 1 3 5 1 2 2 3 4 1 2 4 1 4 5 6 4 6 2 5 7 1 6 7 1 2 3 4 5 2 4 6	9
4 3 1 2 3 2 3 4 3 4 1 1 1 2 3	-1