Module 4: Traffic Lights and Fuel

Problem Description

Time Limit: 3 seconds
Memory Limit: 256 MB

TapNap, highly impressed by your abilities, has placed a combined challenge before you. You must pay attention to both the red lights at intersections and ensure that the truck's fuel does not run out.

You are expected to design an advanced router that passes through **at least one gas station** along the route and simultaneously finds the shortest path considering the traffic lights (which follow the same rules as the previous section).

Note: In this section, your fuel is **not limited** (assume infinite tank capacity). It is sufficient to simply pass through at least one gas station. Assume that refueling time is not counted in the total travel time.

Return the minimum time required for the shortest path from intersection 1 to intersection n that satisfies this condition.

Input Format

- The first line contains two integers n and m, representing the number of intersections and the number of streets.
- In the following m lines, three integers u, v, and w are given, representing the two ends of the two-way street and its length.
- The next line contains an integer k, the number of intersections with gas stations.
- The next line contains k integers, the indices of the intersections with gas stations.
- In the next n lines, two integers t_{on} and t_{off} are given for each intersection, representing the green and red light durations, respectively.

Constraints

- $1 \leq k \leq n \leq 2 \times 10^5$
- $1 \leq m \leq 2 \times 10^5$
- $1 \leq t_{on}, t_{off} \leq 10^6$

Output Format

In the only line of output, print the minimum time required to reach intersection n from intersection 1 such that you definitely pass through at least one gas station.