Shuttle Routes

Filename: routes
Time limit: *20 seconds*

UCF Parking Services is considering updating some of the different off-campus housing shuttles routes. Students have complained that shuttles take too long to get to campus, therefore new routes will only use the path that takes the least amount of time to get to campus. A team has collected data on how long it takes to drive between different intersections around campus. Parking Services has now hired you to find the quickest path from each housing location to campus.

The Problem

Given a description of a map around campus and various housing locations, output the minimum travel time required to get to campus starting from each housing location.

The Input

The first line of input will consist of a single positive integer, c ($c \leq 20$), representing the number of input cases to process. The first line of each input case contains three space separated positive integers, n ($2 \leq n \leq 10^4$), the number of intersections around campus, m ($1 \leq m \leq \min(n^2, 3*10^4)$), the number of roads connecting intersections, and q ($1 \leq q \leq 10^4$), the number of housing locations. The next m lines will contain 3 positive integers, u and v ($1 \leq u,v \leq n$, $u \neq v$), representing the two intersections connected with this road, and c ($0 \leq c \leq 10^5$), the time required to travel between the two intersections, in seconds. The next q lines will contain a single positive integer, p ($1 \leq p \leq n$), an intersection with housing. The school campus will always be at intersection 1. (Note that it's possible for housing to be located at campus.) Roads can be traveled in either direction.

The Output

For each input case, output a single integer for each off-campus housing query, representing the time in seconds of the quickest path to go from the housing location to campus. It is guaranteed that a path exists for each query.

Sample Input

```
1
4 6 2
1 2 10
2 3 15
1 4 35
3 4 5
1 3 50
3 2 20
3
4
```

Sample Output

```
25
30
```