VMSS '15 #4 - Frank and Roads

Time limit: 2.5s **Memory limit:** 256M

One of the reasons why Jeffrey is so scared of roads is that Frank is able to drive on them. Frank is not a very talented driver; in fact, he is one of the worst. However, Frank believes that he won't cause any accidents if the distance he drives is under T kilometres.

Today, Frank needs to buy some apples. From his house, he plans to drive his car on the roads that Jeffrey is scared of in order to get to a Food Basics. To ensure that Frank doesn't cause any accidents, Frank will only visit a Food Basics that is under T kilometres from his house. Help Frank find all of the Food Basics that he can visit.

Input Specification

The first line of input will contain four integers, T $(1 \leq T \leq 10^5)$, the number of kilometres that Frank can drive without seriously injuring someone, N $(1 \leq N \leq 2\,000)$, the number of buildings that Frank can visit, M $(1 \leq M \leq 86\,000)$, the number of roads that Frank can drive on, and G $(1 \leq G \leq N)$, the number of Food Basics near Frank's house.

The next G lines will contain an integer g_i $(1 \leq g_i \leq N)$, denoting the buildings that are a Food Basics. Frank's house will never be a Food Basics. Who would want to live in a grocery store?

We define a road as a connection from one building to another. Each building is marked with a number from 1 to N. Frank's house will be denoted by the integer 0. The next M lines will be in the form `A B L`, denoting a road that travels from building A to building B of length L kilometres. The road can only be traveled in one direction.

Output Specification

Output the number of Food Basics that Frank can visit, within T kilometres from his house.

Sample Input

```
15 3 5 2
2
3
0 1 2
1 2 10
1 3 20
0 3 22
0 2 15
```

Sample Output

```
1
```

Explanation

Shortest distance from Frank's house to building 2 is 12. Shortest distance from Frank's house to building 3 is 22. The only Food Basics reachable from Frank's house is building 2.