

Problem J

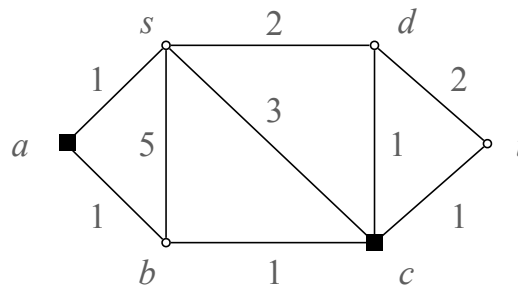
Shortest Paths with Unvisited Sightseeing Spots

Time limit: 2 seconds

During the summer vacation, you plan to visit NCPC national park. There are many sightseeing spots in the park. On the day you leave, you want to take photos of some unvisited spots. However, you do not have enough time so you decide to have the photos along a shortest route from the hotel s to the exit t . Given the map of NCPC national park, which is a graph, the position of the hotel, the position of the exit, and a list of unvisited vertices, please write a program to find the maximum number of photos you can take.

You can assume that the graph is undirected, simple, and connected. Each edge of the graph has a positive weight, representing the time needed to travel between the two spots at the endpoints. In addition, neither s nor t is in the list of unvisited vertices.

For example, the graph in the following figure has four shortest s, t -paths, $s \rightarrow d \rightarrow t$, $s \rightarrow d \rightarrow c \rightarrow t$, $s \rightarrow c \rightarrow t$, and $s \rightarrow a \rightarrow b \rightarrow c \rightarrow t$. Unvisited sightseeing spots are marked by squares. The last shortest path contains two unvisited sightseeing spots, which is more than those in the other shortest s, t -paths. Thus, the requested number is 2.



Input File Format

The first line of the input is a positive integer N , $N \leq 16$, which is the number of test cases. For each test case, the first line contains 5 integers, n , e , s , t , and p , where

- n is the number of vertices of the graph, with $1 \leq n \leq 10^5$. The vertices are numbered from 0 to $n - 1$.
- e is the number of edges of the graph, with $1 \leq e \leq 10^5$.
- s is the vertex number of the hotel.
- t is the vertex number of the exit, $t \neq s$.
- p is the number of unvisited sightseeing spots, with $1 \leq p \leq n - 2$.

Each of the following e lines contains 3 integers, u , v , and w , which specifies the weight w of the edge with endpoints u and v , where $1 \leq w \leq n$. The last line of the input contains p integers, $0 \leq p \leq n$, which are the unvisited sightseeing spots. Consecutive numbers in a line are separated by a space.

Output Format

N lines, which are the outputs of the test cases in the given order. Each line is a nonnegative integer, which is the maximum number of unvisited vertices along a shortest s, t -path of the test case.

Sample Input

```
2
6 9 1 5 2
0 1 1
0 2 1
2 1 5
2 4 1
1 4 3
1 3 2
3 4 1
3 5 2
4 5 1
0 4
4 6 2 0 1
2 3 1
2 0 2
2 1 2
1 0 1
3 0 1
3 1 2
1
```

Output for the Sample Input

```
2
0
```