Problem H
Keep on Truckin'
Time limit: 2 seconds

Dirk Dodgers is in charge of logistics at ChemChem, Inc. His latest project involves the transportation of shipments of illudium phosdex (the shaving cream molecule) from various manufacturing plants to various processing plants. Each manufacturing plant creates a batch of IP at a certain time each day and needs to have it delivered to a specific processing plant. Due to IP's well-known instability, each shipment must be loaded onto a truck immediately after it is created. The time to load a shipment on a truck is 1/2 hour, which is also the time it takes to unload the shipment. After unloading, a truck is free to drive to another manufacturing plant to pick up and deliver another shipment of IP, assuming it can arrive before or at the time that batch of IP is created.

Each manufacturing and processing plant are in different, neighboring cities. ChemChem also has a large garage where all the trucks are stationed overnight, ready for the each day's deliveries. Given a layout of cities, the locations of the various plants and the truck garage, the times to travel on roads between cities, and the times that each IP shipment is created, Dirk would like to know the minimum number of trucks he needs to make sure each shipment at every manufacturing plant can get to its corresponding processing plant.

Input

Input starts with a line containing three integers n m k, where n $(3 \leq n \leq 101)$ is the number of cities, numbered 1 to n, m $(1 \leq m \leq (n-1)/2)$ is the number of pairs of manufacturing/processing plants, and k $(2 \leq k)$ is the number of roads connecting the cities. The truck garage is located in city 1.

After this are m lines, each of the form i j $h{:}mm$, where i and j $(2 \leq i, j \leq n)$ are cities containing a manufacturing plant and its corresponding processing plant, and $h{:}mm$ $(0 \leq h \leq 23, 0 \leq m \leq 59)$ is the time that the IP shipment is ready to be shipped from the manufacturing plant. Any city contains at most one plant.

Finally, there are k lines describing the roads. Each of these lines is of the form c_1 c_2 t_1 t_2 indicating that there is a road connecting cities c_1 and c_2 $(1 \leq c_1, c_2 \leq n)$ and that it takes t_1 minutes to travel from c_1 to c_2 and t_2 minutes to travel from c_2 to c_1 $(1 \leq t_1, t_2 \leq 1\,440)$. There is at most one road between any two cities, and it will always be possible for a truck to reach each manufacturing plant in time to pick up its IP shipment and to move from there to the corresponding processing plant.

Output

Output a single integer indicating the minimum number of trucks needed to make sure all shipments are delivered from each manufacturing plant to its corresponding processing plant.

Sample Input 1

```
7 2 8
2 4 12:40
5 7 14:00
1 2 5 5
1 5 5 5
2 3 10 10
3 4 10 10
3 5 5 15
4 5 20 20
5 6 10 10
6 7 10 100
```

Sample Output 1

```
2
```

Sample Input 2

```
7 2 8
2 4 12:40
5 7 14:15
1 2 5 5
1 5 5 5
2 3 10 10
3 4 10 10
3 5 5 15
4 5 20 20
5 6 10 10
6 7 10 100
```

Sample Output 2

```
1
```