

Twelve Years a Slave

Filename: *twelve*

You and your classmates are currently taking AP American History. In order to diversify your experience in the class, your teacher has required for you and all of your classmates to watch the 2014 Oscar winning film, "12 Years a Slave." You have a very busy life and would like to fit the movie in to your plans without wasting too much time, as is the case with many of your classmates. Your plan is to swing by a movie theater in between an already scheduled trip. You already know that the movie takes exactly 134 minutes. We assume due to your alacrity that it takes no time to park, get to the movie, and leave the theater. We also assume that fortuitously, the movie begins exactly whenever you get to any theater, no matter when that might be. Write a program that will calculate the number of different theaters you can watch the movie at in the middle of a given planned trip and still arrive at your destination on time. You are considered to be on time if you take the exact number of minutes allowed for the whole trip or fewer minutes, you will only watch the movie once on your trip, even if your path takes you through multiple movie theaters, and you may visit as many intermediate locations as necessary to minimize your trip time.

The Problem

Given a list of all locations in your city, some of which will be movie theaters, as well as several trips you are taking and the total amount of time you have to take each trip, determine the number of different theaters you could theoretically stop by to watch 12 Years a Slave for each specific trip and still make it to your destination on time.

The Input

The first line of the input file will contain a single positive integer, n ($n \leq 300$), representing the number of locations in the city. Assume that the locations are numbered 0 through $n-1$. The following n lines will each contain n space separated non-negative integers. The j^{th} value (with these values starting at 0) on the i^{th} line (with line numbers starting at 0) will represent the number of minutes it will take to travel from location i to location j . Assume that the movie theaters are located at the odd indexed locations and that all even indexed locations are not movie theaters. Note that it may take a different number of minutes to travel from city i to city j than to travel from city j to city i and it will always take 0 minutes to travel from city i to city i . The next line of input contains a single positive integer, p , representing the number of travel paths to evaluate. Each of the travel paths will follow, one per line. Each travel path will be described with three space separated integers, s , e and t . The first integer, s , represents the starting location of travel and is guaranteed to be an even integer less than n . The second integer, e , represents the ending location of travel and is guaranteed to be an even integer less than n . The last integer, t ($0 \leq t \leq 1440$), represents the number of minutes you are given to make the trip from s to e . You are guaranteed that there will exist some path between s and e that takes t minutes or less.

The Output

For each travel path, output on a line by itself, the number of different movie theaters at which you could watch, "12 Years a Slave" and still make it to your destination on time.

Sample Input

```
5
0 10 20 30 3
15 0 5 25 35
40 30 0 15 20
35 35 10 0 10
40 3 20 5 0
3
0 2 145
4 0 300
2 0 140
```

Sample Output

```
1
2
0
```

Explanation of Sample Cases

For the first trip, we can go from location 0 to location 4 to location 1 in 6 minutes to arrive at a movie theater, since each leg of the trip is 3 minutes long. From there, we watch the movie in 134 minutes. Then we can travel directly from location 1 to location 2 in 5 minutes, taking a total of 145 minutes. There is no way to go from location 0 to location 3 to location 2 AND watch the movie in 145 minutes.

There is ample time to swing by either location 1 or location 3 to catch the movie and get to location 0 afterwards in the second trip.

In the third trip, we can't watch the movie at either location 1 or location 3. The minimum time spent to swing through location 1 is 172 minutes (location 2 to location 4 to location 1 to location 0) and the minimum time spent to swing through location 3 is 177 minutes (location 2 to location 3 to location 4 to location 1 to location 0).