

Round B APAC Test 2016

A. Travel

[B. gWheels](#)

[C. gNumbers](#)

[D. Albocede DNA](#)

[Questions asked](#)

Submissions

Travel	
6pt	Not attempted 503/1288 users correct (39%)
12pt	Not attempted 365/493 users correct (74%)
gWheels	
5pt	Not attempted 1062/1588 users correct (67%)
14pt	Not attempted 244/873 users correct (28%)
gNumbers	
8pt	Not attempted 259/1020 users correct (25%)
16pt	Not attempted 78/181 users correct (43%)
Albocede DNA	
16pt	Not attempted 31/139 users correct (22%)
23pt	Not attempted 18/23 users correct (78%)

Top Scores

kcm1700	100
LeeSin	100
johngs	100
Taradheesh	100
Eyelids	100
BrianKuo	100
huangxi	100
sgtlaugh	100
yaray	84
alecsyde	84

Problem A. Travel

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
6 points

Solve A-small

Large input
12 points

Solve A-large

Problem

There are **N** cities in Chelsea's state (numbered starting from 1, which is Chelsea's city), and **M** bidirectional roads directly connect them. (A pair of cities may even be directly connected by more than one road.) Because of changes in traffic patterns, it may take different amounts of time to use a road at different times of day, depending on when the journey starts. (However, the direction traveled on the road does not matter -- traffic is always equally bad in both directions!) All trips on a road start (and end) exactly on the hour, and a trip on one road can be started instantaneously after finishing a trip on another road.

Chelsea loves to travel and is deciding where to go for her winter holiday trip. She wonders how quickly she can get from her city to various other destination cities, depending on what time she leaves her city. (Her route to her destination may include other intermediate cities on the way.) Can you answer all of her questions?

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow.

The first line of each test case contains three integers: the number **N** of cities, the number **M** of roads, and the number **K** of Chelsea's questions.

2M lines -- **M** pairs of two lines -- follow. In each pair, the first line contains two different integers **x** and **y** that describe one bidirectional road between the **x**-th city and the **y**-th city. The second line contains 24 integers **Cost[t]** ($0 \leq t \leq 23$) that indicate the time cost, in hours, to use the road when departing at **t** o'clock on that road. It is guaranteed that $\text{Cost}[t] \leq \text{Cost}[t+1]+1$ ($0 \leq t \leq 22$) and $\text{Cost}[23] \leq \text{Cost}[0]+1$.

Then, an additional **K** lines follow. Each contains two integers **D** and **S** that comprise a question: what is the fewest number of hours it will take to get from city 1 to city **D**, if Chelsea departs city 1 at **S** o'clock?

Output

For each test case, output one line containing "Case #x: ", where **x** is the case number (starting from 1), followed by **K** distinct space-separated integers that are the answers to the questions, in order. If Chelsea cannot reach the destination city for a question, no matter which roads she takes, then output -1 for that question.

Limits

$1 \leq x, y \leq N$.
 $1 \leq \text{all Cost values} \leq 50$.
 $1 \leq D \leq N$.
 $0 \leq S \leq 23$.

Small dataset

$1 \leq T \leq 100$.
 $2 \leq N \leq 20$.
 $1 \leq M \leq 100$.
 $1 \leq K \leq 100$.

Large dataset

$1 \leq T \leq 5$.
 $2 \leq N \leq 500$.
 $1 \leq M \leq 2000$.
 $1 \leq K \leq 5000$.

Sample

Input

```
3
3 3 2
1 2
```

```

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1 3
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
2 3
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2 1
3 3
3 1 2
1 2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2 2
3 4
3 3 3
1 2
7 23 23 25 26 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12
1 3
10 11 15 26 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15
2 3
7 29 28 27 26 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12
2 14
3 3
3 21

```

Output

```

Case #1: 1 2
Case #2: 1 -1
Case #3: 17 26 13

```

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