Problem E
Train schedule problem of a skydiving coach

Input File: *testdata.in*
Time Limit: 1 second

Problem Description

Stanley is a coach of skydiving. One day, he is assigned a new coaching session in another city that is far from where he current works. He decides to take trains to the destination from the city where he works now. Stanley has a train timetable, he will book the train tickets that help him arrive the destination as soon as possible, so Stanley will have more time to prepare his new skydiving session. Assume that it always takes 5 minutes for train transfer and it also takes 5 minutes from the destination train station to the final real destination. Please help Stanley to determine his best choice of train tickets in terms of the earliest arrival time.

Technical Specifications

None

Input Format

First line: number of testing data
For each testing data, there are three parts:

1. number of train stations;
2. train schedules (first line: show a number indicating the number, s, of the train routes; for the following s lines, each line shows the detailed information of each route for the following formatdeparture time, departure train station, arrival time, arrival train station);

3. The departure time for Stanley, the departure station for Stanley, the beginning time of the assigned new skydiving session, and the destination train station.

PS. Time is shown in 24 hour format (no seconds), for example, 1310 indicates 13:10.

Output Format

There will be two parts for the output:

1. First line: testing sequence;
2. Second line: If there is no any possible routes that connect the departure and arrival stations, then output no connection; If there exits solutions, however you cant travel to the destination by the request time via your solutions, then output time out; Otherwise, output the arrival time of the destination station (shown in 24 hour format), and the overall travel time from the beginning to the final train station in minutes.

Sample Input

```
2
6
5
0111 01 0230 02
0256 02 0314 03
0350 01 0401 06
0234 01 0254 04
0330 04 0340 05
0100 01 0500 03
6
4
0111 01 0230 02
0234 02 0314 03
0350 01 0401 06
0330 04 0340 05
0100 01 0500 03
```

Sample Output

```
1
0314 134
2
no connection
```