

Round 3 2013

[A. Cheaters](#)[B. Rural Planning](#)**[C. Are We Lost Yet?](#)**[D. Observation Wheel](#)[Contest Analysis](#)[Questions asked](#)

## Submissions

## Cheaters

7pt	Not attempted <b>250/365 users</b> correct (68%)
10pt	Not attempted <b>201/223 users</b> correct (90%)

## Rural Planning

9pt	Not attempted <b>97/137 users</b> correct (71%)
13pt	Not attempted <b>9/28 users</b> correct (32%)

## Are We Lost Yet?

12pt	Not attempted <b>85/127 users</b> correct (67%)
18pt	Not attempted <b>23/53 users</b> correct (43%)

## Observation Wheel

8pt	Not attempted <b>242/255 users</b> correct (95%)
23pt	Not attempted <b>3/6 users</b> correct (50%)

## Top Scores

Gennady.Korotkevich	64
vepifanov	64
SnapDragon	64
tomconerly	64
mystic	64
mikhailOK	64
winger	64
dzhulgakov	64
qwerty787788	64
PavelKunyavskiy	64

## Problem C. Are We Lost Yet?

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  
12 points

Solve C-small

Large input  
18 points

Solve C-large

## Problem

It is time for the Google Code Jam Finals, and we all want to be there! Unfortunately, a few of us accidentally ended up going to Mountain View instead of the correct location: London, England. But don't worry - we can take the free Google shuttle service from Mountain View to London!

The shuttle service consists of **M** one-way routes connecting pairs of cities. For every route, you know from which city and to which city it's going, but unfortunately you do not know exactly how long these routes are. Instead, for every route, you only know that its length can be any integer value from **a<sub>i</sub>** to **b<sub>i</sub>**, inclusive.

I have taken Google shuttles many times before, so I have suggested a path of routes from Mountain View to London. But you worry that my path-finding skills are not as good as yours, and you want to check my work.

Given the path I am suggesting, could it possibly be a shortest path from Mountain View to London? If not, what is the ID of the first shuttle route on my path that is definitely not part of a shortest path (assuming that all previous shuttle routes have been taken according to the path I suggested)?

For example, suppose we have the following list of shuttle routes:

ID	Start City	Destination City	Shuttle Length
1	Mountain View	London	[100, 1000]
2	Mountain View	Paris	[500, 5000]
3	Paris	London	[400, 600]
4	Paris	Moscow	[500, 5000]
5	Moscow	London	[1, 10000]

I suggest the path Mountain View -> Paris -> Moscow -> London. The true shortest path might either be the direct route from Mountain View to London, or the path Mountain View -> Paris -> London. This means that the second route on my path (Paris -> Moscow) was the first one that is definitely not part of a shortest path.

## Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test begins with a line containing three positive integers **N**, **M**, and **P**. **N** represents the total number of cities (cities are numbered from 1 to **N**), **M** represents the total number of shuttle routes, and **P** represents the number of shuttle routes on my path from Mountain View (city #1) to London (city #2).

This is followed by **M** lines, each consisting of four integers, **u<sub>i</sub>**, **v<sub>i</sub>**, **a<sub>i</sub>**, **b<sub>i</sub>**. Each line represents the fact that there is a one-way shuttle route from city **u<sub>i</sub>** to city **v<sub>i</sub>**, and you know that its length can be any integer value from **a<sub>i</sub>** to **b<sub>i</sub>**, inclusive. The routes are given IDs from 1 to **M** in the same order of the input.

This is followed by a line consisting of **P** unique integers in the range from 1 to **M**. These represent, in order, the shuttle routes I am taking you on. Each one is an ID of a route from the previous list.

## Output

For each test case, output one line containing "Case #x: n", where x is the case number (starting from 1) and n is the ID of the first shuttle route in my path that could not possibly be part of the shortest path from Mountain View to London. If there is no such route, print "Looks Good To Me" instead.

## Limits

1 ≤ **T** ≤ 10.  
1 ≤ **u<sub>i</sub>**, **v<sub>i</sub>** ≤ **N**.  
1 ≤ **a<sub>i</sub>** ≤ **b<sub>i</sub>** ≤ 1000000.

My path is guaranteed to be a valid path from Mountain View (city #1) to London (city #2).

There might be more than one shuttle route between the same two cities, and there might be a shuttle route going from a city to itself. Also the suggested path might visit the same city more than once, but it will not use the same shuttle route more than once.

#### Small dataset

$2 \leq N \leq 20$ .  
 $1 \leq M \leq 20$ .  
 $1 \leq P \leq 10$

#### Large dataset

$2 \leq N \leq 1000$ .  
 $1 \leq M \leq 2000$ .  
 $1 \leq P \leq 500$ .

#### Sample

Input	Output
3	Case #1: 4
4 5 3	Case #2: Looks Good To Me
1 2 100 1000	Case #3: 6
1 3 500 5000	
3 2 400 600	
3 4 500 5000	
4 2 1 10000	
2 4 5	
3 3 2	
1 3 1 1	
3 2 1 1	
1 2 1 2	
1 2	
5 6 3	
1 3 1 1	
4 2 1 9	
1 4 1 1	
3 5 2 2	
5 2 2 2	
3 4 1 2	
1 6 2	

All problem statements, input data and contest analyses are licensed under the [Creative Commons Attribution License](#).

© 2008-2017 Google [Google Home](#) - [Terms and Conditions](#) - [Privacy Policies and Principles](#)

Powered by



Google Cloud Platform