

## Submissions

## Odd Man Out

7pt Not attempted  
209/214 users  
correct (98%)7pt Not attempted  
206/209 users  
correct (99%)

## Get to Work

9pt Not attempted  
127/149 users  
correct (85%)9pt Not attempted  
124/127 users  
correct (98%)

## Qualification Round

11pt Not attempted  
47/87 users correct  
(54%)22pt Not attempted  
4/32 users correct  
(13%)

## Polygraph

12pt Not attempted  
14/30 users correct  
(47%)23pt Not attempted  
0/2 users correct  
(0%)

## Top Scores

RalfKistner	77
mohamedafattah	65
Ahmed.Kamel	65
gwyllim	65
Nooodles	55
amrSamir	55
Blazerfrost	55
naguib	55
Kosie	55
mRefaat88	55

## Problem B. Get to Work

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  
9 points

Solve B-small

Large input  
9 points

Solve B-large

## Problem

You work for a company that has **E** employees working in town **T**. There are **N** towns in the area where the employees live. You want to ensure that everyone will be able to make it to work. Some of the employees are drivers and can drive **P** passengers. A capacity of  $P == 1$  indicates that the driver can only transport themselves to work. You want to ensure that everyone will be able to make it to work and you would like to minimize the number of cars on the road.

You want to calculate the number of cars on the road, with these requirements:

- Every employee can get to town **T**.
- The only way an employee may travel between towns is in a car belonging to an employee.
- Employees can only take rides from other employees that live in the same town.
- The minimum number of cars is used.

Find whether it is possible for everyone to make it to work, and if it is, how many cars will end up driving to the office.

## Input

One line containing an integer **C**, the number of test cases in the input file.

For each test case there will be:

- One line containing the integer **N**, the number of towns in your area and the integer **T**, the town where the office is located.
- One line containing the integer **E**, the number of employees.
- **E** lines, one for each employee, each containing:
  - An integer  $H \geq 1$ , the home town of the employee, followed by
  - An integer  $P \geq 0$ , the number of passengers they can drive. If the employee is not licensed to drive the number will be 0.

## Output

- **C** lines, one for each test case in the order they occur in the input file, each containing the string "Case #**X**: " where **X** is the number of the test case, starting from 1, followed by:
  - The string **IMPOSSIBLE**, if there are not enough drivers for everyone to commute; **OR**
  - **N** space-separated integers, one for each town from **1** to **N**, which indicate the number of vehicles commuting from the town.

## Limits

$$1 \leq T \leq N$$

$$1 \leq H \leq N$$

$$0 \leq P \leq 6$$

## Small dataset

$$C = 50$$

$$1 \leq N \leq 10$$

$$1 \leq E \leq 100$$

## Large dataset

$$C = 100$$

$$1 \leq N \leq 100$$

$$1 \leq E \leq 500$$

## Sample

Input	Output
3	Case #1: 0 0 0 0 0
5 1	Case #2: IMPOSSIBLE
3	Case #3: 1 0 0 1 0
1 0	
1 0	
1 0	

```
5 1
3
2 4
2 0
3 0
5 3
5
1 2
1 0
4 2
4 4
4 0
```

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