Round D APAC Test

A. Cube IV

B. GBus count

C. Sort a scrambled itinerary

D. Itz Chess

Questions asked 4

Submissions

Cube IV

8pt | Not attempted **1708/2380 users** correct (72%)

15pt | Not attempted **1492/1679 users** correct (89%)

GBus count

9pt | Not attempted **2048/2354 users** correct (87%)

15pt | Not attempted **1865/2018 users** correct (92%)

Sort a scrambled itinerary

11pt | Not attempted **1623/1914 users** correct (85%)

15pt | Not attempted **1483/1602 users** correct (93%)

Itz Chess

12pt | Not attempted **654/1008 users** correct (65%)

15pt | Not attempted **393/622 users** correct (63%)

Top Scores

dreamoon	100
Kriiii	100
Balajiganapathi	100
uws933	100
NExPlain	100
culaucon	100
fahimzubayer18	100
pattara.s	100
buaamm	100
lijiancheng	100

Problem A. Cube IV

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 8 points	Solve A-small
Large input 15 points	Solve A-large

Problem

Vincenzo decides to make cube IV but only has the budget to make a square maze. Its a perfect maze, every room is in the form of a square and there are 4 doors (1 on each side of the room). There is a big number written in the room. A person can only move from one room to another if the number in the next room is larger than the number in his current room by 1. Now, Vincenzo assigns unique numbers to all the rooms (1, 2, 3, ... S^2) and then places S^2 people in the maze, 1 in each room where S is the side length of the maze. The person who can move maximum number of times will win. Figure out who will emerge as the winner and the number of rooms he will be able to move.

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case consists of **S** which is the side length of the square maze. Then S^2 numbers follow like a maze to give the numbers that have been assigned to the rooms.

```
1 2 9
5 3 8
4 6 7
```

Output

For each test case, output one line containing "Case #x: r d", where x is the test case number (starting from 1), r is the room number of the person who will win and d is the number of rooms he could move. In case there are multiple such people, the person who is in the smallest room will win.

Limits

$1 \le \mathbf{T} \le 100$.

Small dataset

$1 \le \mathbf{S} \le 10$

Large dataset

$1 \le \mathbf{S} \le 10^3$.

Sample

Input	Output
2 2 3 4 1 2 3 1 2 9 5 3 8 4 6 7	Case #1: 1 2 Case #2: 6 4

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