Campus Test
Powered by Google Code Jam

Practice Mode

Round B China New Grad Test 2014

- Submissions

Sudoku Checker

5pt	Not attempted **1471/2010 users** correct (73%)
9pt	Not attempted **1146/1443 users** correct (79%)

Meet and party

9pt	Not attempted **496/823 users** correct (60%)
15pt	Not attempted **47/409 users** correct (11%)

Hex

12pt	Not attempted **19/260 users** correct (7%)
13pt	Not attempted **14/18 users** correct (78%)

Dragon Maze

8pt	Not attempted **336/594 users** correct (57%)
12pt	Not attempted **229/330 users** correct (69%)

Ignore all my comments

17pt	Not attempted **216/468 users** correct (46%)
0pt	Not attempted

- Top Scores

TankEngineer	100
Nekosyndrome	100
l521530	100
W.Junqiao	100
LTzycLT	100
iloahz	100

Problem B. Meet and party

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 15 points	Solve B-large

Problem

Little Sin lives in a Manhattan-grid city, a 2D plane where people can only go north, west, south or east along the grid. The distance from (x1, y1) to (x2, y2) is |x1 - x2| + |y1 - y2|.

Little Sin really likes to party and is hoping to host a house party in Manhattan this Sunday. Little Sin has collected a list of people who will attend, and now needs to decide at whose home she will host the party.

Little Sin invited all of the people in several rectangular areas, and all of those people have said yes. A rectangular area is denoted as (x1, y1, x2, y2), where x1 ≤ x2, y1 ≤ y2. People who live in a rectangular area fill all integral points inside it. So there are a total of (x2 - x1 + 1) * (y2 - y1 + 1) people in the rectangular area (x1, y1, x2, y2).

Little Sin knows the coordinates of those rectangular areas. She wants the party to be hosted at the home of one of the people who is attending, but she also doesn't want everyone else to have to travel very far: she wants to minimize the sum of all distances from all attendees' houses to the party. Can you help her?

Input

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each test case starts with a line containing a single integer: the number of rectangular areas, **B**. **B** lines follow. Each line contains 4 integers: x1, y1, x2, y2, denoting the coordinates of a rectangular area of people Little Sin has invited to her party.

Output

For each test case, output one line containing "Case #t: x y d", where t is the case number (starting from 1) and (x, y) is the coordinates of the person whose home the party should be hosted. If there are multiple positions with the same minimum total distance, choose the one with the smallest x. If there are still multiple positions, choose the one with the smallest y. The value d is the sum of the distances from all attendees' houses to the point (x, y).

Limits

1 ≤ **T** ≤ 10.
$|x1|, |y1|, |x2|, |y2| \leq 10^9$.
x1 ≤ x2, y1 ≤ y2.
The rectangular areas within a test case don't intersect.

Small dataset

1 ≤ **B** ≤ 100.
1 ≤ **Total number of people in each test case** ≤ 1000.

Large dataset

1 ≤ **B** ≤ 1000.

drazil	87
navi	85
wishstudio	85
redsniper	76

1 ≤ **Total number of people in each test case** ≤ 1000000.

Sample

Input	Output
2 1 0 0 2 2 3 -1 2 -1 2 0 0 0 0 1 3 1 3	Case #1: 1 1 12 Case #2: -1 2 6