

F - Rectangles

Time Limit: 1 sec

Memory Limit: 16MB

This problem has no story. You just have to find the common area of all rectangles.

INPUT:

The first line contains integer N ($1 \leq N \leq 1000$). It is the number of tests. Each test described by number of rectangles M ($1 \leq M \leq 30$). Next N lines contain 4 integers: $X1$ $Y1$ $X2$ $Y2$ ($-10000 \leq X1; Y2; X2; Y2 \leq 10000$). Each rectangle is described by 2 points: lower left and upper right corners. All rectangle sides are parallel to Ox or Oy axes.

OUTPUT:

For each test case out line formatter like this: „Case i : a .” Where „ i ” is a test number, and „ a ” is an area that belongs to all rectangles.

SAMPLE INPUT:

```
1
4
0 0 10 10
-1 -1 2 2
-10 0 2 100
-10 -10 10 10
```

SAMPLE OUTPUT:

```
Case 1: 4
```

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Huge Easy Contest #1