Intersection and Union of Two Rectangles AZ101

? Ask Doubt

Time-Limit: 1 sec Score: 50.00/100 Difficulty :

Memory: 256 MB Accepted Submissions: 100

Description

You are given two rectangles with their lower-left and upper-right coordinates. You have to find the area of the intersection and union of the rectangles. Both rectangles are axis-aligned.

Input Format

The first line of the input contains one integer T - the number of test cases. Then T test cases follow.

The first line of each test case contains four space-separated integers X_1, Y_1, X_2, Y_2 - coordinates of the first rectangle.

The second line of each test case contains four space-separated integers X_3, Y_3, X_4, Y_4 - coordinates of the second rectangle.

Output Format

For each test case, print the area of intersection and union of the rectangles.

Constraints

$1 \le T \le 10^5$
$-10^3 \le X_i, Y_i \le 10^3$
It is guaranteed that $X_1 \le X_2$, $Y_1 \le Y_2$, $X_3 \le X_4$, and $Y_3 \le Y_4$.

Sample Input 1

Copy

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

Sample Output 1

Copy

```
1 9
2 9
```

C++14[GCC]

Submit

```
1
```