

4276 Triangles

There are some points in the 2-dimensional plane. Each point is colored red, green or blue. No three points are collinear. Any triple of blue points can form a triangle, which is called a blue triangle. A blue triangle is called red-blue triangle if there are more red points than green points in it, or green-blue triangle if there are more green points than red points in it.

You are to count the numbers of red-blue triangles and green-blue triangles.

Input

The input consists of multiple test cases. Each test case starts with a line containing three integers R , G and B ($0 \leq R, G, B \leq 100$), which are the numbers of red, green and blue points, respectively.

Each of the following R lines contains two integers x and y ($0 \leq x, y \leq 10000$), which gives the coordinate of a red points.

The following G lines and B lines give the coordinates of all green points and blue points in the same manner, respectively.

The last test case is followed by a line containing three '-1'.

Output

For each test case, print a line containing the test case number (beginning with 1) followed by two integers, which are the numbers of red-blue triangles and green-blue triangles.

Sample Input

```
1 1 3
1 1
2 3
0 0
0 3
3 0
1 1 1
0 0
1 1
2 3
-1 -1 -1
```

Sample Output

```
Case 1: 1 0
Case 2: 0 0
```