

Problem F: Outpost Separation

“Then at night fresh forces came over the river against our camp. All Isengard must be emptied; and Saruman has armed the wild hillmen and herd-folk of Dunland beyond the rivers, and these also he loosed upon us. We were overmastered. The shield-wall was broken. Erkenbrand of Westfold has drawn off those men he could gather towards his fastness in Helm’s Deep. The rest are scattered.”

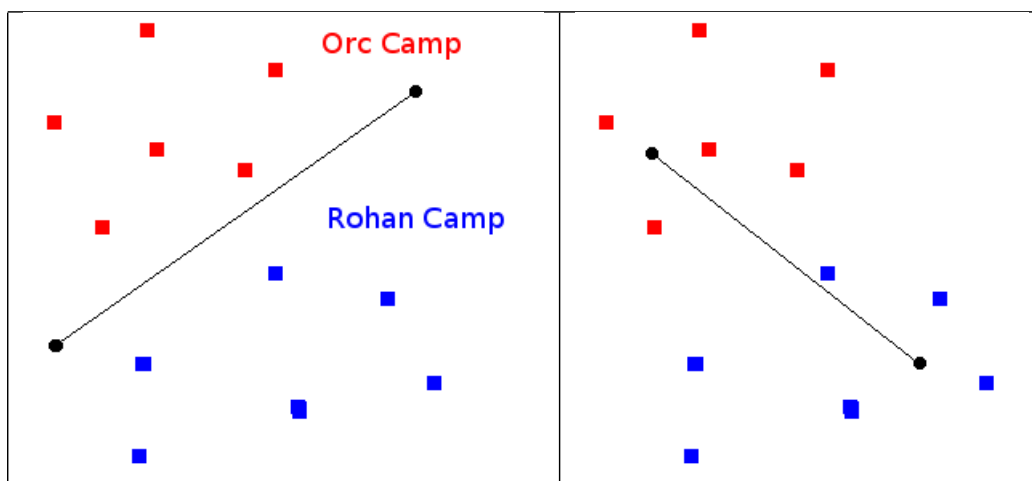
During the third age, the wizard Saruman began amassing an army of Orcs around Isengard with the intent of invading the Kingdom of Rohan. The wizard Gandalf, when alerted to this danger, rode to Rohan to warn King Theoden of this threat. Theoden, after taking some convincing of the danger Saruman posed, gathered his armies as well.

Both the men of Rohan and Saruman’s Orcs of Isengard hold a camp in central Middle Earth. Each camp consists of a set of outposts established at a location which is represented by an x,y coordinate.

The men of Rohan wish to build a wall to barricade the advance of the Orcs into their camp. For the wall to be effective, it must completely separate the two camps. That means every Orcish outpost is on one side of the wall and every Rohan outpost is on the other.

You must write a program that, given the location of each of the outposts of each camp, and the location of a potential wall, determines whether or not the wall will completely separate the two camps or not.

Below are two examples. On the left, the wall does completely separate the two camps. On the right, the wall does not.



Input

The first line of input contains two integers. The first is the number of outposts in the Orcish camp, O . The second is the number of outposts in the Rohan camp, R .

After this first line, there will be O lines of input giving the x, y coordinates of each of the Orcish outposts.

Next, there will be R lines of input giving the x, y coordinates of each of the Rohan outposts.

The last two lines of output will be the 2 x, y coordinates of the end points of the wall.

You can assume that a wall is built as a straight line and can be extended infinitely in both directions. You can also assume all coordinates will be given as integers. All x, y coordinate pairs are separated by one space.

Output

Output consists of a single line that either says “Wall separates camps.” or “Wall does not separate camps.”

Sample Input 1

```
5 4
7 7
2 14
13 16
23 5
6 27
15 26
24 16
28 27
2 40
2 34
30 4
```

Sample Output 1

Wall separates camps.

Sample Input 2

```
4 3
6 12
18 10
12 4
16 22
30 15
27 5
34 9
32 4
22 28
```

Sample Output 2

Wall does not separate camps.