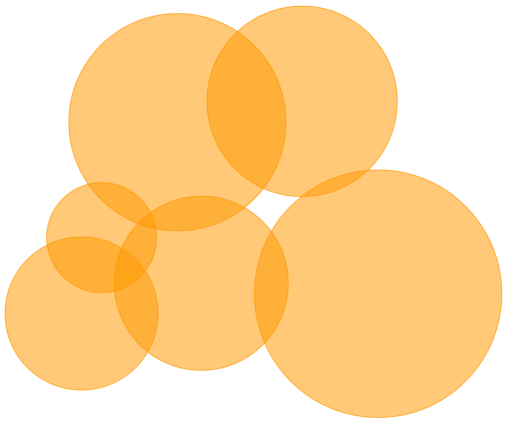
K: Disk Covering

Time limit: 0.5 second



On a vast, flat green meadow, there are several golden disks in the shape of perfect circles from ancient times. According to legend, if one chants a spell, the area covered by the disks will turn into flames, fending off enemy attacks. When the enemy comes, you can hide in a place completely surrounded by disks, yet not on the disks, thus isolated from the outside world by the flames.

Given the positions and sizes of the disks, determine whether such a hiding place exists.

Input

The first line contains an integer N, representing the number of disks. In the following N lines, the i^{th} line contains three integers that describe disk i: the x-coordinate x_i, the y-coordinate y_i of its center, and its radius r_i.

Output

A single integer, 1 if such a place exists, or 0 otherwise.

Limits

- $1 \leqslant N \leqslant 250$;
- $-10^9 \leqslant x_i, y_i \leqslant 10^9$ for all $i \leqslant N$;
- $1 \leqslant r_i \leqslant 10^9$ for all $i \leqslant N$;
- There are no three disks whose circular outlines intersect at a common point;
- Among all intersection points of the circular outlines of any two disks, the distance between any two intersection points is greater than or equal to 1;
- There are no two disks whose circular outlines are tangent to each other (i.e. have exactly one intersection point);
- For two disks whose circular outlines do not intersect, the distance between any point on the circular outline of one disk and any point on the circular outline of the other disk is always greater than or equal to 1.

Sample Input 1

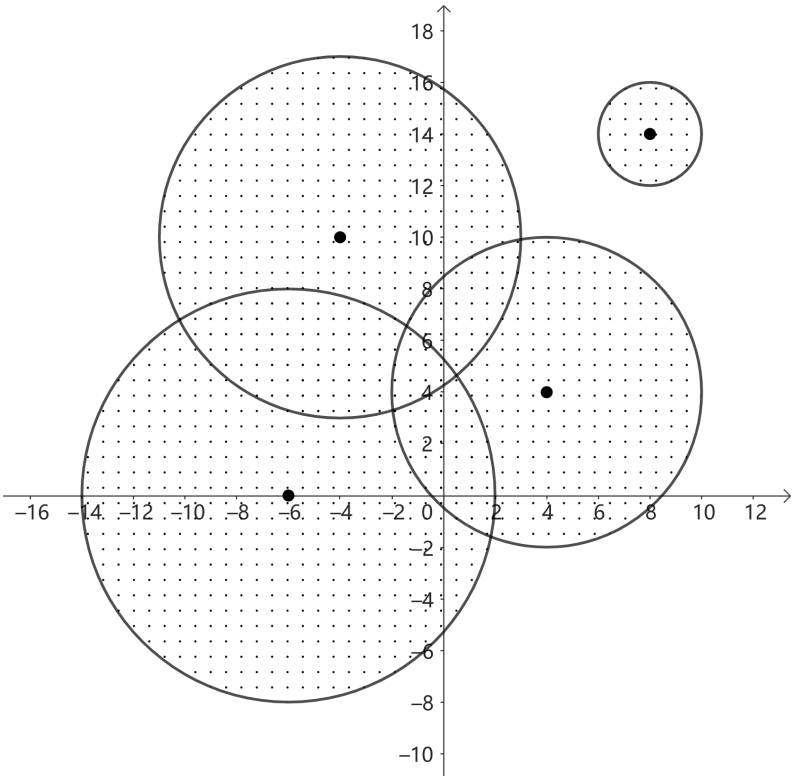
```
4
-6 0 8
-4 10 7
4 4 6
8 14 2
```

Sample Output 1

```
0
```

Sample Explanation 1

In this sample, there isn't any place that is completely surrounded by disks, yet not on the disks.



Sample Input 2

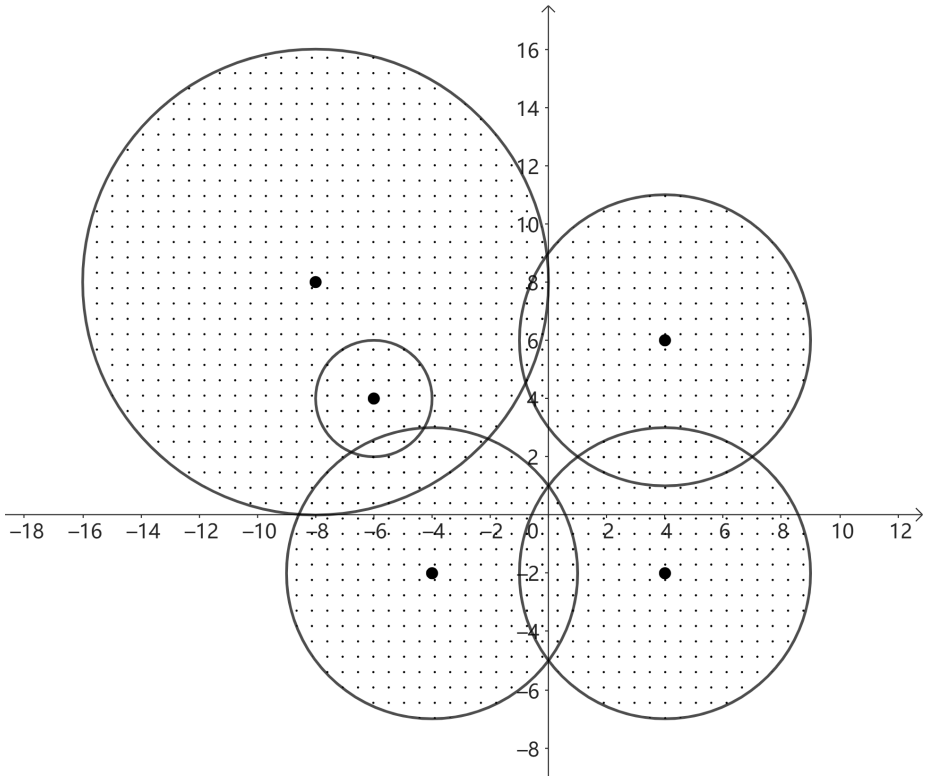
```
5
4 -2 5
-4 -2 5
-8 8 8
4 6 5
-6 4 2
```

Sample Output 2

```
1
```

Sample Explanation 2

In this sample, $(-0.5, 3)$ is one of the places we can hide. It is surrounded by disks, yet not on the disks. Note that although all the inputs are integers, the hiding place does not necessarily have to be an integer point.



Sample Input 3

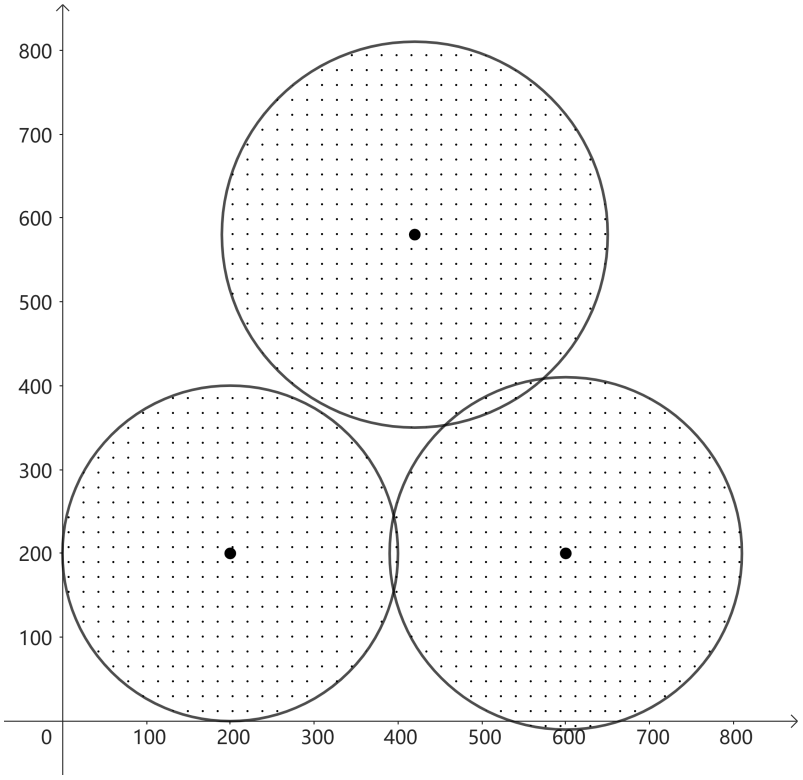
```
3
420 580 230
200 200 200
600 200 210
```

Sample Output 3

```
0
```

Sample Explanation 3

In this sample, there isn't any place that is completely surrounded by disks, yet not on the disks.


800
700
600
500
400
300
200
100
0
100
200
300
400
500
600
700
800