
Bonxie attack

P47175_en

Setzè Concurs de Programació de la UPC - Final (2018-09-19)

When walking on the remote isle of Foula, professor Oak was dive-bombed by many bonxies that were protecting their territories. Those (fortunately, failed) attacks inspired this problem.



Assume an infinite flat world. There, we have n bonxies, each protecting a disc of radius r_i centered at (x_i, y_i) . Please compute a point protected by the maximum number of bonxies.

Input

Input is all integer numbers, and consists of several cases, each one with n followed by the n triples $x_i y_i r_i$. You can assume $1 \leq n \leq 1000$, that all coordinates are at most 10^9 in absolute value, that all radii are between 1 and 10^9 , that each pair of circles of the discs either do not intersect, or intersect at exactly two points, and that there is no point in the plane with more than two circles on it. The input cases have no precision issues.

Output

For every case, print the maximum number of bonxies that can protect a point.

Hint

The expected solution has cost $\Theta(n^2 \log n)$.

Sample input

```
5 0 0 5 0 -6 2 2 0 2 -1 1 3 9 9 1
2 1000000000 -1000000000 1000000000 500000000 -500000000 42
```

Sample output

```
3
2
```

Problem information

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