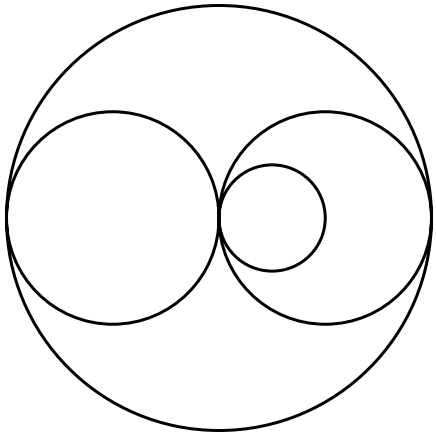
COCI '13 Contest 6 #4 Kružnice

Time limit: 1.0s **Memory limit:** 32M

Enjoying a casual afternoon walk in the coordinate system, little Luka has encountered N **unique circles** with its centers lying on the x-axis. The circles **do not intersect**, but they **can touch** (from the inside and the outside). Fascinated with circles, Luka wondered how many **regions** the circles divide the plane into. Of course, you are going to help him answer this question.

A **region** is a set of points such that every two points can be connected with a **continuous** curve, without cutting through any of the circles.



One of the possible layouts of circles

Input Specification

The first line of input contains the integer N $(1 \leq N \leq 100\,000)$, the number of circles.

Each of the following N lines contains two integers x_i and r_i $(-10^9 \leq x_i \leq 10^9, 1 \leq r_i \leq 10^9)$, the number x_i representing the x coordinate of the i^{th} circle and the number r_i representing the radius of the i^{th} circle.

All the circles in the input will be unique.

Output Specification

The first and only line of output must contain the required number from the task.

Scoring

In test cases worth 40% of total points, the N will not exceed $5\,000$.

Sample Input 1

```
2
1 3
5 1
```

Sample Output 1

```
3
```

Sample Input 2

```
3
2 2
1 1
3 1
```

Sample Output 2

```
5
```

Sample Input 3

```
4
7 5
-9 11
11 9
0 20
```

Sample Output 3

```
6
```

Explanation for Sample Output 3

The example corresponds to the image in the task statement.