Connected Components

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	512 megabytes

There are n kingdoms on the continent of Eminor numbered from 1 to n. Each kingdom has two attribute values represented by a_i and b_i.

Kingdom i and j ($i < j$) are connected by an undirected road when $a_i - a_j \leq i - j \leq b_i - b_j$, or $a_j - a_i \leq j - i \leq b_j - b_i$.

Gew wants to know how many connected components are in this continent.

Input

The first line contains a single integer n ($1 \leq n \leq 10^6$).

The i-th of the next n lines contains two integers a_i, b_i ($-10^9 \leq a_i, b_i \leq 10^9$)

Output

Output a single integer, denoting the number of connected components.

Examples

standard input	standard output
5 1 -4 3 -2 5 0 7 2 9 4	5
2 1 2 2 1	1
5 5 4 3 3 2 5 3 4 4 5	2