A. Chain Reaction

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

There are n beacons located at distinct positions on a number line. The i-th beacon has position a_i and power level b_i. When the i-th beacon is activated, it destroys all beacons to its left (direction of decreasing coordinates) within distance b_i inclusive. The beacon itself is not destroyed however. Saitama will activate the beacons one at a time from right to left. If a beacon is destroyed, it cannot be activated.

Saitama wants Genos to add a beacon **strictly to the right** of all the existing beacons, with any position and any power level, such that the least possible number of beacons are destroyed. Note that Genos's placement of the beacon means it will be the first beacon activated. Help Genos by finding the minimum number of beacons that could be destroyed.

Input

The first line of input contains a single integer n ($1 \le n \le 100\,000$) — the initial number of beacons.

The i-th of next n lines contains two integers a_i and b_i ($0 \le a_i \le 1\,000\,000$, $1 \le b_i \le 1\,000\,000$) — the position and power level of the i-th beacon respectively. No two beacons will have the same position, so $a_i \neq a_j$ if $i \neq j$.

Output

Print a single integer — the minimum number of beacons that could be destroyed if exactly one beacon is added.

Examples

input
4 1 9 3 1 6 1 7 4

output
1

input
7 1 1 2 1 3 1 4 1 5 1 6 1 7 1

output
3

Note

For the first sample case, the minimum number of beacons destroyed is 1. One way to achieve this is to place a beacon at position 9 with power level 2.

For the second sample case, the minimum number of beacons destroyed is 3. One way to achieve this is to place a beacon at position 1337 with power level 42.