C. 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

Codeforces Round #336 (Div. 2)
Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Problem tags

dp *1600

No tag edit access

→ Contest materials

- Announcement (en)
- Tutorial (en)

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.
