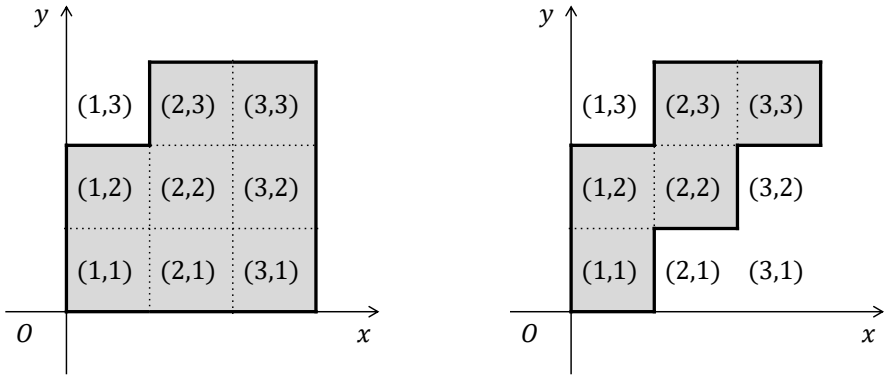
# Staircase Museum

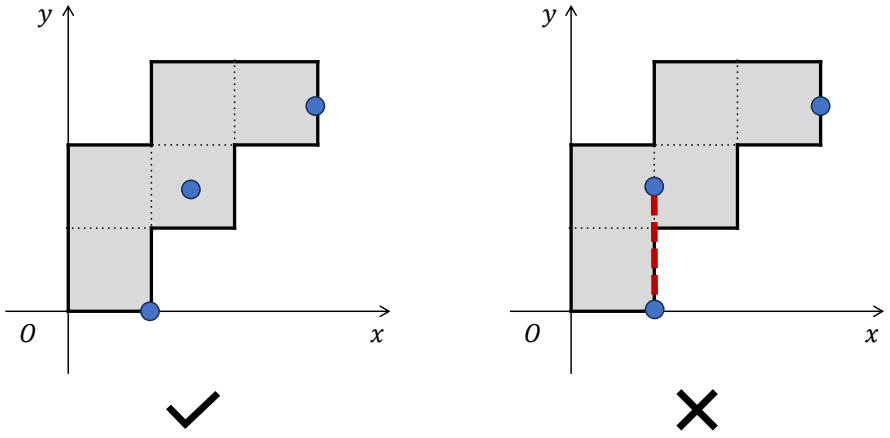
| | |
|---|---|
| Input file: | `standard input` |
| Output file: | `standard output` |
| Time limit: | 2 seconds |
| Memory limit: | 1024 megabytes |

A "staircase" museum has been constructed for exhibiting abstract art works. To describe the shape of the museum – a staircase, let the ground be represented as a plane with infinitely many unit square cells with edges aligned to the $x$ and $y$ axes: for every pair of integers $(x, y)$, there is a cell $(x, y)$ that has its bottom-left corner at coordinate $(x - 1, y - 1)$ and its top-right corner at coordinate $(x, y)$. Then, two given sequences $l_1, l_2, \ldots, l_n$ and $r_1, r_2, \ldots, r_n$, all cells $(x, y)$ that satisfy $1 \le x \le n$ and $l_x \le y \le r_x$ form the interior of the museum.




The staircase museums in the first two sample cases.

A group of abstract artists will enter the museum, and each will find a fixed position either in the interior or on the boundary of the museum. However, none of them would like to see other artists while appreciating the artworks in the museum, as it is already challenging enough to understand abstractions, and seeing others would be too distracting. Here, two artists can see each other if and only if every point of the straight line segment connecting them lies entirely within the interior or on the boundary of the museum.




The left solution shows a possible positioning for the second sample. The right solution is invalid, as two artists can see each other.

As the manager of the museum, it is your responsibility to ensure that the artists can enjoy their visit without being distracted by each other. You need to determine the maximum number of artists such that no pair of artists can see each other within the museum.

## Input

The input consists of multiple test cases. The first line contains an integer $T$ ($1 \le T \le 10^5$), the number of test cases. For each test case:

- The first line contains an integer $n$ ($1 \le n \le 5 \times 10^5$).
- Then $n$ lines follow, the $i$-th of which contains two integers $l_i$ and $r_i$ ($1 \le l_i \le r_i \le 10^9$). For each $i = 1, 2, \ldots, n-1$, it holds that $l_i \le l_{i+1} \le r_i \le r_{i+1}$, ensuring the museum is a connected staircase.

It is guaranteed that the sum of $n$ over all test cases does not exceed $5 \times 10^5$.

## Output

For each test case, output a line containing a single integer, indicating the maximum number of artists so that every two artists cannot see each other in the museum.

## Example

| standard input | standard output |
|---|---|
| 4<br>3<br>1 2<br>1 3<br>1 3<br>3<br>1 2<br>2 3<br>3 3<br>3<br>1 1<br>1 3<br>3 3<br>4<br>1 2<br>2 3<br>3 4<br>4 5 | 2<br>3<br>3<br>4 |