

# Canvas Painting

Input file:            **standard input**  
Output file:           **standard output**  
Time limit:            2 seconds  
Memory limit:         1024 megabytes

In the Kingdom of Flealand, there is a long canvas divided into  $n$  segments, numbered from 1 to  $n$ . Each segment is initially painted with a unique color, such that the color of segment  $i$  is  $a_i = i$ .

The royal artist Crysfla has received  $m$  magical paint spells. Each spell affects a continuous interval  $[l, r]$  on the canvas. When a spell is cast, the artist may choose **any two positions**  $u$  and  $v$  within this interval ( $l \leq u, v \leq r$ ), and repaint segment  $u$  with the color of segment  $v$ , i.e., perform  $a_u = a_v$ .

The spells can be used in **any order**, and each spell may be used at most once.

After all spells are used, the artist wishes to admire the canvas. Help the artist **minimize the number of distinct colors** that remain on the canvas.

## Input

The input contains multiple test cases.

The first line contains a single integer  $T$  ( $1 \leq T \leq 2 \times 10^5$ ) — the number of test cases.

For each test case: - The first line contains two integers  $m$  ( $1 \leq m \leq 2 \times 10^5$ ) and  $n$  ( $1 \leq n \leq 10^9$ ) — the number of spells and the length of the canvas. - The next  $m$  lines each contain two integers  $l$  and  $r$  ( $1 \leq l \leq r \leq n$ ) — describing one paint spell.

The total number of spells across all test cases satisfies  $\sum m \leq 2 \times 10^5$

## Output

For each test case, output a single integer — the minimum number of distinct colors on the canvas after applying the spells.

## Example

| standard input | standard output |
|----------------|-----------------|
| 4              | 1               |
| 3 3            | 2               |
| 1 3            | 1               |
| 2 2            | 1               |
| 2 3            |                 |
| 4 4            |                 |
| 1 4            |                 |
| 2 3            |                 |
| 2 3            |                 |
| 4 4            |                 |
| 6 7            |                 |
| 1 4            |                 |
| 2 3            |                 |
| 3 4            |                 |
| 3 6            |                 |
| 5 7            |                 |
| 5 6            |                 |
| 2 1            |                 |
| 1 1            |                 |
| 1 1            |                 |