# Problem H. Set of Intervals

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

Prof. Pang has a multi-set of intervals $S = \{[l_i, r_i]\}(l_i < r_i)$.

Prof. Pang will perform the following operation for $|S| - 1$ times:

- Select two intervals $[a, b]$ and $[c, d]$ from $S$, and then choose two integers $x, y$ satisfying $x \in [a, b], y \in [c, d], x < y$. After that, delete $[a, b]$ and $[c, d]$ from $S$, and add $[x, y]$ to $S$.

It's easy to find that $S$ contains exactly one interval after the operations, and Prof. Pang will get the interval as a gift.

Now Prof. Pang wants you to calculate how many different intervals he can get.

## Input

The first line contains one integer $T$ ($1 \le T \le 10^4$), the number of test cases.

For each test case, the first line contains one integer $n$ ($1 \le n \le 10^5$) — the size of $S$. Each of the following $n$ lines contains two integers $l_i$ and $r_i$ ($1 \le l_i < r_i \le 10^9$), describing the $i$-th interval in $S$.

It is guaranteed that the sum of $n$ over all test cases is no more than $10^5$.

## Output

For each test case, output one line containing the answer to Prof. Pang's question.

## Example

| standard input | standard output |
|---|---|
| 4<br>1<br>1 1000000000<br>2<br>1 1000000000<br>1 1000000000<br>4<br>1 2<br>3 4<br>5 6<br>7 8<br>4<br>1 3<br>2 4<br>5 8<br>6 7 | 1<br>499999999500000000<br>26<br>28 |