

Wooden Sticks

[English](#)

[Vietnamese](#)

There is a pile of n wooden sticks. The length and weight of each stick are known in advance. The sticks are to be processed by a woodworking machine in one by one fashion. It needs some time, called setup time, for the machine to prepare processing a stick. The setup times are associated with cleaning operations and changing tools and shapes in the machine. The setup times of the woodworking machine are given as follows:

(a) The setup time for the first wooden stick is 1 minute.

(b) Right after processing a stick of length l and weight w , the machine will need no setup time for a stick of length l' and weight w' if $l \leq l'$ and $w \leq w'$. Otherwise, it will need 1 minute for setup.

You are to find the minimum setup time to process a given pile of n wooden sticks.

For example, if you have five sticks whose pairs of length and weight are $(9, 4)$, $(2, 5)$, $(1, 2)$, $(5, 3)$, and $(4, 1)$, then the minimum setup time should be 2 minutes since there is a sequence of pairs $(4, 1)$, $(5, 3)$, $(9, 4)$, $(1, 2)$, $(2, 5)$.

Input

The input consists of T test cases. The number of test cases (T) is given in the first line of the input file. Each test case consists of two lines: The first line has an integer n , $1 \leq n \leq 5000$, that represents the number of wooden sticks in the test case, and the second line contains $2n$ positive integers $l_1, w_1, l_2, w_2 \dots l_n, w_n$, each of magnitude at most 10000, where l_i and w_i are the length and weight of the i th wooden stick, respectively. The $2n$ integers are delimited by one or more spaces.

Output

The output should contain the minimum setup time in minutes, one per line.

Example

Input:

```
3
5
4 9 5 2 2 1 3 5 1 4
3
2 2 1 1 2 2
3
1 3 2 2 3 1
```

Output:

```
2
1
3
```