ACM International Collegiate Programming Contest
ASIA Regional - Taejon

acm International Collegiate Programming Contest

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Problem B
Wooden Sticks
Input: stick.in

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 $l \le l'$ and $w \le w'$. 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 $(4,9)$, $(5,2)$, $(2,1)$, $(3,5)$, and $(1,4)$, then the minimum setup time should be 2 minutes since there is a sequence of pairs $(1,4)$, $(3,5)$, $(4,9)$, $(2,1)$, $(5,2)$.

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, $1 \le n \le 5000$, 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, …, 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.

Sample Input (stick.in)	Output for the Sample 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	2 1 3