



Task D

Tower

You are given a sequence of n boxes. Build the highest possible tower from this sequence obeying the rule that a box b may be put on the top of a box a only if b follows a in the sequence and none of the dimensions of the base of the box b exceeds the corresponding dimension of the box a . Note that there are two ways of putting each box (assume that boxes cannot be turned upside down or put on the side). Your program should implement an algorithm working in $O(n^2)$ -time.

Input

The first line contains an integer z ($1 \leq z \leq 2 \cdot 10^9$) – the number of data sets. Each data set is as follows:

The first line contains a number n ($1 \leq n \leq 4000000$) – the number of the boxes in the sequence. Each of the next n lines contains 3 integers, the first two denoting the sizes of the base and the third the high of each box, separated by a space.

Output

The hight of the highest tower you can build.

Example

For the input:

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

the output is:

```
5
```