

# Intervals

You are given  $n$  closed integer intervals  $[a_i, b_i]$  and  $n$  integers  $c_1, \dots, c_n$ .

## Task

Write a program that:

- reads the number of intervals, their endpoints and integers  $c_1, \dots, c_n$  from the standard input,
- computes the minimal size of a set  $Z$  of integers which has at least  $c_i$  common elements with interval  $[a_i, b_i]$ , for each  $i = 1, 2, \dots, n$ ,
- writes the answer to the standard output.

## Input

The input begins with the integer  $t$ , the number of test cases. Then  $t$  test cases follow.

For each test case the first line of the input contains an integer  $n$  ( $1 \leq n \leq 50000$ ) - the number of intervals. The following  $n$  lines describe the intervals. Line  $(i+1)$  of the input contains three integers  $a_i, b_i$  and  $c_i$  separated by single spaces and such that  $0 \leq a_i \leq b_i \leq 50000$  and  $1 \leq c_i \leq b_i - a_i + 1$ .

## Output

For each test case the output contains exactly one integer equal to the minimal size of set  $Z$  sharing at least  $c_i$  elements with interval  $[a_i, b_i]$ , for each  $i = 1, 2, \dots, n$ .

## Example

**Sample input:**

```
1
5
3 7 3
8 10 3
6 8 1
1 3 1
10 11 1
```

**Sample output:**

```
6
```

**Warning: enormous Input/Output data, be careful with certain languages**