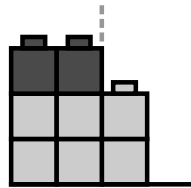# Sculpture II

Following your domination of the fruit sculpture market you've decided to try something new. After hours of thought you've realised the future of art will definitely be BLOCKO, specifically mass produced BLOCKO sculptures.

You've already built the assembly line which consists of a chute at a fixed position dropping BLOCKO blocks onto a conveyor belt below it. The conveyor belt moves right 1 centimetre each second. A *sculpture* consists of N blocks of BLOCKO, the ith of which will drop t_i seconds after assembly begins, have width w_i centimetres and height h_i centimetres. When a BLOCKO block is dropped it will fall straight down until its bottom edge hits either the conveyor belt or a previously placed BLOCKO block, where it immediately attaches itself to the sculpture. Note that a falling block will not stop moving if it just touches corners with another block. Furthermore when each block is dropped, its right edge will be in line with the right edge of the chute and you may assume it falls into place *instantly*.
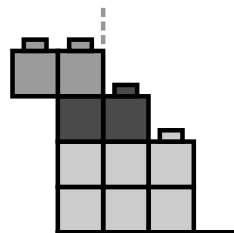
For instance, consider the sculpture consisting of the following 4 blocks. The first block falls after 1 second, is 2 centimetres tall, and 3 centimetres wide.
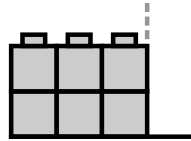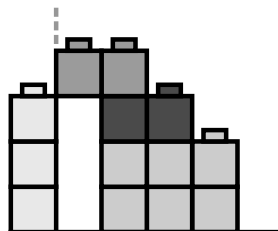

The second block falls after 2 seconds, is 1 centimetre tall, and 2 centimetres wide.

The third block falls after 3 seconds, is 1 centimetre tall, and 2 centimetres wide.

The final block falls after 5 seconds, is 3 centimetres tall, and 1 centimetre wide. Thus the final sculpture will be:

Before you can start shipping your art across the world you must first package it. Specifically you need to determine the maximum height any part of the sculpture will be so that you can order boxes of the correct size. In the above example the sculpture's height is 4 centimetres.

Input

The first line of input will contain a single integer N: the number of blocks in the sculpture.
N lines will follow, the ith of which will contain the integers t_i, w_i, and h_i describing the ith block. You may assume that the blocks will be listed in **increasing** order of time they are placed, that is $t_1 < t_2 < \cdots < t_N$.

Output

Your program must output a single integer: the height of the sculpture in centimetres.

Sample Input

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

Sample Output

```
4
```

Explanation

The sample input corresponds to the scenario described above in the problem statement.

Subtasks & Constraints

For all subtasks, $1 \le N \le 100\,000$, $1 \le t_i, w_i \le 1\,000\,000$, and $1 \le h_i \le 1000$ for all i.

- For Subtask 1 (20 marks), $t_i, w_i, N \le 1000$ and it is guaranteed the the sculpture is at most 1000 centimetres tall.

- For Subtask 2 (20 marks), all blocks have the same w_i and the same h_i, that is, they all have the same dimensions. Note w_i does not have to equal h_i, that is, the blocks are not necessarily square.

- For Subtask 3 (60 marks), no further constraints apply.