

## Fast Food Restaurant

What a nice holiday! After travelling to a small beautiful town, Tom plans to get something to eat, finally he finds a small fast food restaurant with a long queue for ordering. He wonders how long he has to wait before ordering his food.

Giving you  $N$  customers, for each customer you will be given the arrival time  $A$ , the service time  $O$  needed for making order and the maximum number  $L$  of the people representing that if there are more than  $L$  people ahead of him (when he/she arrives) in the queue, the customer will give up.

### Input

The input contains multiple test cases. For each test case, the first line contains a number  $N$  indicating the number of customers. Each of the following  $N$  lines contains three numbers,  $A_i$ ,  $O_i$  and  $L_i$  corresponding to the  $i$ -th customer. It is guaranteed that the sequence of arrival times is non-decreasing (if two customers have the same arrival time, the customer who is earlier in the input is considered to have arrived earlier).

$1 \leq N \leq 100000$ ,  $0 \leq A$ ,  $L \leq 100000$ ,  $0 \leq O \leq 100$ .

### Output

For each test case, print the result of the last customer, that is print -1 if he/she gives up, otherwise print the time when he/she begins to be served.

Sample Input	Sample Output
2	-1
1 1 1	-1
1 0 0	1
3	13
0 1 1	16
0 1 2	
0 1 1	
3	
0 1 1	
0 0 1	
0 1 2	
4	
0 9 0	
7 4 1	
<del>8 3 1</del>	
12 2 2	
4	
0 9 0	
7 4 1	
9 3 1	
12 2 2	

9  
13  
~~8 3 1~~

9  
 $9 + 4 = 13$

0 ————— 9  
7 2 ————— 11  
8 3 ————— 11  
12 — 14

Explain: in the first test case, there are two customers, the first customer arrives at time 1 and use 1 unit of time to make the order, the second customer cannot endure for the queue size larger than 0 and gives up.