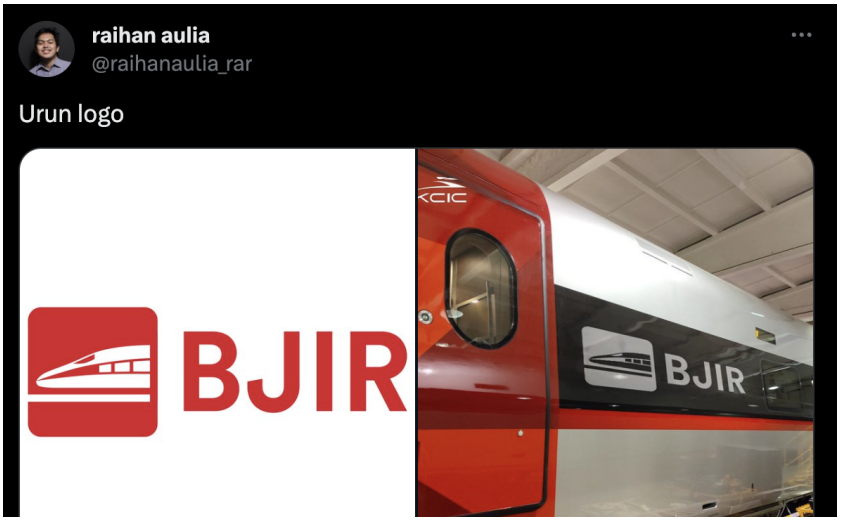
Bandung-Jakarta Intercity Rails

Time Limit: 1s
Memory Limit: 256 MB



Description

The Bandung-Jakarta Intercity Rails train will begin its first journey today. The train will depart from Stasiun Jakarta and arrive at Stasiun Bandung. During the journey, it will stop at **n** stations (first and last station are included). There will be **x** and **y** number of passengers getting on and off at each stop.

You already know the capacity of the train, but you want to know more about the minimum capacity of the train, that is, the number people at a time will never exceed it. Given the data of passenger getting on and off at each station, determine the possible minimum capacity of the train

Note that at the first station, there will be no passenger getting off, and at the last station, all passenger will get off. Also, all the exiting passenger will get off first before the entering passenger.

Input Format

The first line contains integer **n**, the number of station the the train will visit
The next **n** lines contain $\mathbf{x_i}$ and $\mathbf{y_i}$, the number of people getting on and off at the i-th stop

Output Format

The minimum capacity of the train

Constraints

$2 \le n \le INT\_MAX$
$0 \le x_i, y_i \le INT\_MAX$

Example

Input
5 4 0 2 3 5 1 2 4 0 5
Output
7

Explanation

At the first station, there are 0 passenger initially, then 4 passengers are getting on, so the minimum capacity should be 4

Then at the second station, 3 passengers are getting off and 2 are getting in. So now there are 3 passengers, which left the minimum capacity unchanged

At the third station, 1 passenger gets off and 5 gets in, so the minimum capacity should be raised to 7 passengers

At the fourth station, 4 passengers get off and 2 get in, so there are 5 passengers now and the minimum capacity remains unchanged

Finally, at the last station, the remaining 5 passengers will get off

Therefore, the minimum capacity of the train should be 7