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## A. Tram

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Linear Kingdom has exactly one tram line. It has  $n$  stops, numbered from 1 to  $n$  in the order of tram's movement. At the  $i$ -th stop  $a_i$  passengers exit the tram, while  $b_i$  passengers enter it. The tram is empty before it arrives at the first stop. Also, when the tram arrives at the last stop, all passengers exit so that it becomes empty.

Your task is to calculate the tram's minimum capacity such that the number of people inside the tram at any time never exceeds this capacity. Note that at each stop all exiting passengers exit **before** any entering passenger enters the tram.

### Input

The first line contains a single number  $n$  ( $2 \leq n \leq 1000$ ) — the number of the tram's stops.

Then  $n$  lines follow, each contains two integers  $a_i$  and  $b_i$  ( $0 \leq a_i, b_i \leq 1000$ ) — the number of passengers that exits the tram at the  $i$ -th stop, and the number of passengers that enter the tram at the  $i$ -th stop. The stops are given from the first to the last stop in the order of tram's movement.

- The number of people who exit at a given stop does not exceed the total number of people in the tram immediately before it arrives at the stop. More formally,  
 $\forall i (1 \leq i \leq n) : \sum_{j=1}^{i-1} b_j - \sum_{j=1}^{i-1} a_j \geq a_i$ . This particularly means that  $a_1 = 0$ .
- At the last stop, **all** the passengers exit the tram and it becomes empty. More formally,  
 $\sum_{j=1}^{n-1} b_j - \sum_{j=1}^{n-1} a_j = a_n$ .
- No passenger will enter the train at the last stop. That is,  $b_n = 0$ .

### Output

Print a single integer denoting the minimum possible capacity of the tram (0 is allowed).

### Examples

input	Copy
4 0 3 2 5 4 2 4 0	
output	Copy
6	

### Note

For the first example, a capacity of 6 is sufficient:

- At the first stop, the number of passengers inside the tram before arriving is 0. Then, 3 passengers enter the tram, and the number of passengers inside the tram becomes 3.
- At the second stop, 2 passengers exit the tram (1 passenger remains inside). Then, 5 passengers enter the tram. There are 6 passengers inside the tram now.
- At the third stop, 4 passengers exit the tram (2 passengers remain inside). Then, 2 passengers enter the tram. There are 4 passengers inside the tram now.

### → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

### Codeforces Beta Round #87 (Div. 2 Only).

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[Practice](#)


### → Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

[Start virtual contest](#)

### → Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

### → Clone Contest to Mashup

You can clone this contest to a mashup.

[Clone Contest](#)

### → Submit?

 Language: Java 1.8.0\_241

 Choose file: [Choose File](#) No file chosen

Be careful: there is 50 points penalty for



- Finally, all the remaining passengers inside the tram exit the tram at the last stop. There are no passenger inside the tram now, which is in line with the constraints.

Since the number of passengers inside the tram never exceeds 6, a capacity of 6 is sufficient. Furthermore it is not possible for the tram to have a capacity less than 6. Hence, 6 is the correct answer.

submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

#### → Last submissions

Submission	Time	Verdict
<a href="#">132564958</a>	Oct/21/2021 00:26	Wrong answer on test 5
<a href="#">132564938</a>	Oct/21/2021 00:25	Wrong answer on test 1
<a href="#">132557770</a>	Oct/20/2021 21:43	Wrong answer on test 3

#### → Problem tags

implementation \*800

No tag edit access

#### → Contest materials

- Announcement
- Tutorial (en)

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