

A Race Against Time



A relay race is being organised in a school for middle school students by two high school students, Mason and Madison. Mason starts with the baton and Madison receives the baton at the final destination. There are middle school students in between Mason and Madison, and each of their heights is given. Mason's height, too, is given. Initially, the baton is with Mason and it is passed to the destination in a manner similar to a relay race.

- 1) At any moment, the current baton carrier has an option to hand over the baton to the student at the current position or to continue to the next position. However, if the student at the given position is taller than the current baton carrier, it is mandatory to hand over the baton because it is a safer option according to Mason.
- 2) It takes one second to move between consecutive positions.
- 3) Whenever the baton is handed over, there is a time and price associated with it.
- 4) The time taken, in seconds, is the absolute difference between the heights of the current baton carrier and the student to whom the baton is handed.
- 5) The student to whom the baton is passed charges a given price.

Note: Price charged by a baton carrier can be negative too.

The baton must be sent to Madison in the minimum possible sum of time and price. Complete the function **Solve** which takes the number of middle school students, Mason's height, and heights and prices charged by middle school students as input, and return the minimum possible sum of time and price required for the baton to reach Madison.

*Also, note that no handover takes place once the baton has reached the destination.

Input Format

Each input consists of four lines. The first line contains the integer N , where $N - 1$ denotes the number of middle school students.

The second line contains the integer h , denoting Mason's height. The third line consists of $N - 1$ integers, denoting the height of each middle school student. The last line consists of $N - 1$ integers, denoting price charged by each middle school student.

Constraints

- $1 < N \leq 10^5$
- $0 \leq H_i \leq 10^9$
- $0 \leq h \leq 10^9$
- $-10^9 \leq P_i \leq 10^9$

Output Format

The output contains one single integer denoting the required minimum sum of time and price in which the baton can be sent to Madison.

Sample Input 0

```
4
5
2 6 2
2 3 2
```

Sample Output 0

8

Explanation 0

Here, Mason's height is 5.
In the optimal case first the baton is passed to the 2nd student.

exchange time =abs(6-5) = 1 second
baton has moved 2 places , so another 2 seconds
Total time = 3 seconds
The price charged = 3

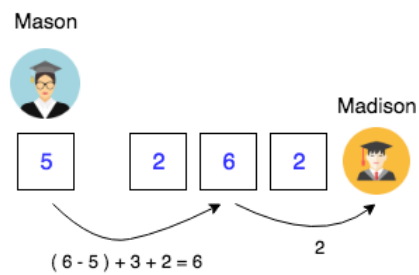
Then , the second student takes it to the destination.

baton has moved 2 places , so another 2 seconds

Total time taken = 3 seconds + 2 seconds = 5 seconds

Total Price = 3

Sum = 3 + 5 =8



Sample Input 1

4
5
2 3 1
2 3 2

Sample Output 1

4