Problem C
Crazy Driver

Problem ID: driver
CPU Time limit: 1 second
Memory limit: 1024 MB

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In the Linear City, there are N gates arranged in a straight line. The gates are labelled from 1 to N. Between adjacent gates, there is a bidirectional road. Each road takes one hour to travel and has a toll fee. Since the roads are narrow, you can only travel from gates to gates but cannot U-turn between gates.

Crazy driver Gary starts at Gate 1 at time 0 and he wants to drive through Gate N while minimizing the cost of travelling. However, Gate i only allows a car to pass through after a certain time T_i. As Gary is crazy, his car will always be traveling on any one of the roads, i.e., it will not stop at a gate. What is the minimum cost for him to drive through Gate N?

As an example, consider the sample input below. An optimal solution is the following:

1. Gate 1 to Gate 2 (cost 5)
2. Gate 2 to Gate 1 (cost 5)
3. Gate 1 to Gate 2 to Gate 3 (cost 9)
4. Go between Gate 3 and Gate 4 until 7-th hour (cost 6)
5. Go to and pass through Gate 5 (cost 8)

Input

The first line contains an integer, N ($2 \le N \le 10^5$), the number of gates. The second line has $N-1$ integers, $C_1, \ldots, C_{N-1}$. C_i ($1 \le C_i \le 10^6$) represents the toll fee of the road between Gate i and Gate $i+1$. The third line has N integers, $T_1, \ldots, T_N$. T_i ($0 \le T_i \le 10^6$) represents the opening time (in hour) for each gate. T_1 will always be 0.

Output

Output an integer representing the minimum cost of traveling.

Sample Input 1

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5
5 4 2 8
0 2 4 4 8
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Sample Output 1

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33
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