F. Ordering T-Shirts

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

It's another Start[c]up, and that means there are T-shirts to order. In order to make sure T-shirts are shipped as soon as possible, we've decided that this year we're going to order all of the necessary T-shirts before the actual competition. The top C contestants are going to be awarded T-shirts, but we obviously don't know which contestants that will be. The plan is to get the T-Shirt sizes of all contestants before the actual competition, and then order enough T-shirts so that no matter who is in the top C we'll have T-shirts available in order to award them.

In order to get the T-shirt sizes of the contestants, we will send out a survey. The survey will allow contestants to either specify a single desired T-shirt size, or two adjacent T-shirt sizes. If a contestant specifies two sizes, it means that they can be awarded either size.

As you can probably tell, this plan could require ordering a lot of unnecessary T-shirts. We'd like your help to determine the minimum number of T-shirts we'll need to order to ensure that we'll be able to award T-shirts no matter the outcome of the competition.

Input

Input will begin with two integers N and C ($1 \le N \le 2 \cdot 10^5$, $1 \le C$), the number of T-shirt sizes and number of T-shirts to be awarded, respectively.

Following this is a line with $2 \cdot N - 1$ integers, s_1 through $s_{2 \cdot N - 1}$ ($0 \le s_i \le 10^8$). For odd i, s_i indicates the number of contestants desiring T-shirt size $((i + 1) / 2)$. For even i, s_i indicates the number of contestants okay receiving either of T-shirt sizes $(i / 2)$ and $(i / 2 + 1)$. C will not exceed the total number of contestants.

Output

Print the minimum number of T-shirts we need to buy.

Examples

input
2 200 100 250 100

output
200

input
4 160 88 69 62 29 58 52 44

output
314

Note

In the first example, we can buy 100 of each size.