Accumulated Data Plan

Last year, I have negotiated a brand new data plan called 'Accumulated Data Plan' with my internet provider. The plan is so simple. Each month, I can use *at most* X megabytes to surf the internet. It seems normal, but there is an additional *accumulative* benefit: Each megabyte that I don't spend in that month gets transferred to the next month and can still be spent in the next month. Of course, I can only use the megabytes that are actually left.

I would like to know how much megabytes I can use in this month, so I wrote how much megabytes I have spent in each of the first N months since I started to use this plan. Given this information, please write a program that calculates how many megabytes I may use in the $(N+1)$-th month since using the plan.

Input

The input consists of an arbitrary number of records, but no more than 10.

The first line of each record contains two integers N $(1 \leq N \leq 100{,}000)$ and X $(1 \leq X \leq 100{,}000)$. The second line of each record contains integers $P_1, P_2, \cdots, P_n$, the number of megabytes spent in each of the first N months of using the plan, each separated by a space. P_i are from real data, so it is guaranteed that I *never* use more megabytes than I actually have.

The end of input is indicated by a line containing only the value -1.

Output

For each input record, print a line that consists an integer denoting how many megabytes I may use in the $(N+1)$-th month since using the plan.

Example

Standard input	Standard output
3 10 4 6 2 3 10 10 2 12 -1	28 16

Explanation of the example

For the first example:

- In the first month, out of 10MB I spent 4MB and transferred 6MB to the next month.
- In the second month, out of 10 + 6 = 16MB I spent 6MB and transferred 10MB to the next month.
- In the third month, out of 10 + 10 = 20MB I spent 2MB and transferred 18MB to the next month.
- In the fourth month, I have 18 + 10 = 28MB to spend.

Time Limit

1 second.