

Janitor's Cart

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

The organizers of the programming championship have printed the problem statements in several university offices. The university janitor must collect the statements and bring them to the staircase.

A staircase is at one end of a straight corridor with n offices. Office i is located i meters along the corridor from the staircase and contains a_i printed statements.

You need to move all the statements to the staircase using a cart that can carry at most c statements at a time. Each trip starts at the staircase with an empty cart and ends at the staircase, where all collected statements are unloaded.

During a trip, you may collect statements from several offices. Statements from the same office may be transported on different trips.

Find the minimum total distance traveled by the cart.

Input

The first line contains two integers n and c ($1 \leq n \leq 200\,000$, $1 \leq c \leq 10^9$): the number of offices and the capacity of the cart.

The second line contains n integers $a_1, a_2, \dots, a_n$ ($0 \leq a_i \leq 10^6$): the numbers of statements in the offices.

Output

Print one integer: the minimum total distance, in meters, needed to move all the statements to the staircase.

Examples

standard input	standard output
3 3 2 0 2	8
2 2 0 5	12
4 10 0 0 0 0	0

Note

In the first example, one trip collects two statements from office 3 and one from office 1. Its length is 6 meters. Another trip collects the remaining statement from office 1 and has length 2 meters. The total distance is 8 meters.

In the second example, office 2 has five statements. Three trips of length 4 meters each are needed, so the answer is 12.

In the third example, there are no statements, so no trips are needed.