PROBLEM 3

Discount Destinations

Time and memory limits: 1 second, 256 MB

You've booked out a period of N consecutive days from your busy schedule to go travelling! Furthermore, you've decided to depend on your state's ever-so-reliable public transport to take you to your destinations.

Your trip on day i would typically cost A_i dollars. However, due to recent complaints about the cost of living, the government has introduced a new discount system: on **every** consecutive group of K days, your spending is limited to **at most** D dollars.

The days are processed in order from day 1 to day N. On day i, you are charged the largest non-negative integer not exceeding A_i such that, after this charge, the total amount charged in the last K days is at most D. You may assume that on every day before day 1, you were not charged any money.

With this new system in place, your job now is to figure out exactly how much you'll spend on public transport this vacation.

Subtasks and Constraints

Your program will be graded using many secret tests. Every test follows some rules:

- $2 \leq N \leq 200\,000$.
- $1 \leq K \leq N$.
- $1 \leq D \leq 10\,000$.
- $1 \leq A_i \leq 10\,000$ for all i.

The secret tests are divided into subtasks. Your program must correctly solve **every test** within a subtask to earn the marks for that subtask:

- For Subtask 1 (20 points), $K = 1$.
- For Subtask 2 (10 points), $A_i = 1$ for all i.
- For Subtask 3 (35 points), $N, K \leq 1\,000$.
- For Subtask 4 (35 points), no special rules apply.

Input

Your solution must read input and print output. We recommend using the solution templates (which you can find on the competition website) to help you with input and output.

The input follows a specific format:

- The 1st line contains the integers N, K and D.
- The 2nd line contains N integers $A_1, A_2, \ldots, A_N$, where A_i is the amount you would spend, before any discount, on day i of your trip.

Output

Your program must output the total amount of dollars you'll spend over the N days.

Sample Input 1

```
5 1 3
2 4 7 1 3
```

Sample Output 1

```
12
```

Sample Input 2

```
5 3 3
1 2 3 2 1
```

Sample Output 2

```
5
```

Sample Input 3

```
5 5 9
1 2 3 4 5
```

Sample Output 3

```
9
```

Explanation

- In the 1st sample case, your spending is limited to 3 dollars per day. You pay a total of 12 dollars, as shown below:

Day	Original amount	Paid amount
1	\$2	\$2
2	\$4	\$3
3	\$7	\$3
4	\$1	\$1
5	\$3	\$3

- In the 2nd sample case, your spending is limited to 3 dollars for any 3 consecutive days. You pay a total of 5 dollars, as shown below:

Day	Original amount	Paid amount
1	\$1	\$1
2	\$2	\$2
3	\$3	\$0
4	\$2	\$1
5	\$1	\$1

- In the 3rd sample case, you pay a total of 9 dollars.