Billboards

by HackerRank

ADZEN is a popular advertising firm in your city that owns all n billboard locations on Main street. The city council passed a new zoning ordinance mandating that no more than k consecutive billboards be up at any given time. For example, if there are $n = 3$ billboards on Main street and $k = 1$, ADZEN must remove either the middle billboard, the first two billboards, or the last two billboards.

Being a for-profit company, ADZEN wants to lose as little advertising revenue as possible when removing the billboards. They want to comply with the new ordinance in such a way that the remaining billboards maximize their total profits (i.e., the total sum of all the billboards left standing on Main street).

Given n, k, and the revenue value of each of the n billboards, find and print the maximum profit that ADZEN can earn while complying with the zoning ordinance. Assume that Main street is a straight, contiguous block of n billboards that can be removed but *cannot* be reordered in any way.

Input Format

The first line contains two space-separated integers, n (the number of billboards) and k (the maximum number of billboards that can stand together on any part of the road).
Each line i of the n subsequent lines contains an integer denoting the revenue value of billboard i (where $0 \leq i < n$).

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq k \leq n$
- $0 \leq$ **revenue value of any billboard** $\leq 2 \cdot 10^9$

Output Format

Print a single integer denoting the maximum profit ADZEN can earn from Main street after complying with the city's ordinance.

Sample Input 0

```
6 2
1
2
3
1
6
10
```

Sample Output 0

```
21
```

Explanation 0

There are $n = 6$ billboards, and we must remove some of them so that no more than $k = 2$ billboards are immediately next to one another.

We remove the first and fourth billboards, which gives us the configuration `_ 2 3 _ 6 10` and a profit of $2 + 3 + 6 + 10 = 21$. As no other configuration has a profit greater than 21, we print 21 as our answer.

Sample Input 1

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

Sample Output 1

```
14
```

Explanation 1

There are $n = 5$ billboards, and we must remove some of them so that no more than $k = 4$ billboards are immediately next to one another.

We remove the first billboard, which gives us the configuration `_ 2 3 4 5` and a profit of $2 + 3 + 4 + 5 = 14$. As no other configuration has a profit greater than 14, we print 14 as our answer.