2015-2016 NOI Training Diagnostic Test

Problem: CARPARK

Time Limit: 1 second

Memory Limit: 64 MB

Problem Description You are running a grocery store, and today has been a particularly turbulent day for you. Outside your grocery store, there is a carpark with N parking lots arranged in a row, several of them with cars and several of them empty.

A hurricane is approaching, and you want to protect these cars. You are allowed to order up to S huge sheets (of an arbitrary length) that can cover and protect a contiguous segment of parking lots, whether there are cars or not.

You want to cover all the cars, but for every parking lot you cover, you have to pay some money, therefore you want to minimise the parking lots you cover. Please find out the minimum number of parking lots you need to cover.

Input Format The first line of input will contain two integers, N and S. The second line of input will contain N integers, containing either 0 or 1, indicating whether there is a car on that parking lot.

Output Format The output should contain one integer, the minimum number of parking lots to be covered.

Limits These are the bounds on the input.

Subtask	Score	Additional Bounds
1	11	$1 \leq S \leq N \leq 20$
2	13	$1 \leq S \leq N \leq 400$
3	21	$1 \leq S \leq N \leq 1,000$
4	27	$S = 1$, $1 \leq N \leq 500,000$
5	28	$1 \leq S \leq N \leq 500,000$

Sample Input

```
7 2
1 1 0 1 0 1 1
```

Sample Output

```
6
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