F. Array Covering

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Misha has an array of integers of length n. He wants to choose k different continuous subarrays, so that each element of the array belongs to at least one of the chosen subarrays.

Misha wants to choose the subarrays in such a way that if he calculated the sum of elements for each subarray, and then add up all these sums, the resulting value was maximum possible.

Input

The first line of input contains two integers: n, k ($1 \le n \le 100\,000, 1 \le k \le n \cdot (n + 1) / 2$) — the number of elements in the array and the number of different subarrays that must be chosen.

The second line contains n integers a_i ($-50\,000 \le a_i \le 50\,000$) — the elements of the array.

Output

Output one integer — the maximum possible value Misha can get by choosing k different subarrays.

Example

input
5 4 6 -4 -10 -4 7
output
11