Cute Subsequences

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

You are given an array of n positive integers a_1, a_2, ..., a_n, as well as a positive integer k. You need to divide the array into k non-empty subsequences such that each element of the array belongs to exactly one subsequence. A subsequence is a sequence that can be obtained from another sequence by deleting some elements without changing the order of the remaining elements.

Let the i-th subsequence contain elements with indices $j_1 < \ldots < j_l$. The *value* of this subsequence is defined as the maximum value of $a_{j_m} + m$ for all m from 1 to l.

The *cost* of dividing the array into k subsequences is the sum of the *values* of these subsequences.

Find the maximum *cost* of the division.

Input

The first line contains two positive integers n and k ($1 \leq k \leq n \leq 500\,000$) — the size of the array and the number of subsequences to divide it into.

The second line contains n positive integers a_1, a_2, ..., a_n ($1 \leq a_i \leq 10^9$) — the elements of the array.

Output

Output the maximum *cost* of dividing the given array into k non-empty subsequences.

Example

standard input	standard output
5 3 3 7 10 1 2	24

Note

In the sample test, the array can be divided into $[3, 10]$, $[7]$, $[1, 2]$. Then the answer will be $(10 + 2) + (7 + 1) + (2 + 2) = 12 + 8 + 4 = 24$.

Scoring

The tests for this problem consist of six groups. Points for each group are given only if all tests of the group and all tests of the required groups are passed.

Group	Points	Additional Constraints		Required Groups	Comment
		n	k		
0	0	–	–	–	Examples.
1	14	$n \leq 8$	–	0	
2	19	–	$k = 2$	–	
3	17	–	–	–	$a_{i+1} \leq a_i$
4	21	–	–	–	$a_{i+1} \geq a_i - 1$
5	15	$n \leq 1000$	–	0, 1	
6	14	–	–	0 – 5	