Problem A. Fascination Street

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

A street named *Fascination Street* is divided into N equal length of blocks. For each block i ($1 \le i \le N$), it has block $i-1$ in its left side if $i > 1$, and block $i+1$ in its right side if $i < N$.

Unlike its name, the street is infamous to be a dark and eerie place in the night. To solve this, Robert decided to install the streetlight for some of the blocks. The cost of installing a streetlight for i-th block is W_i, and the total cost is the sum of each installation cost. After installing, every block should either have a streetlight, or have a streetlight in it's left or right block.

Robert also has some tricks to reduce the cost. Before installing the streetlight, Robert selects two distinct blocks i and j, and exchange their position. After the operation, the cost of installation is exchanged. In other words, the operation simply swaps the value of W_i and W_j. This operation have no cost, but Robert can only perform it at most K times.

Now, given the array W and the maximum possible number of operations K, you should find the minimum cost of lighting the whole street.

Input

The first line contains two space-separated integers N, K. N is the number of blocks, and K is the maximum possible number of operations. ($1 \le N \le 250000, 0 \le K \le 9$)

The second line contains N space-separated integers $W_1, W_2 \cdots W_N$, where W_i is the cost of installing a streetlight for i-th block. ($0 \le W_i \le 10^9$)

Output

Print a single integer which contains the minimum cost of lighting the whole street.

Examples

standard input	standard output
5 0 1 3 10 3 1	4
5 1 1 3 10 3 1	2
12 0 317 448 258 208 284 248 315 367 562 500 426 390	1525
12 2 317 448 258 208 284 248 315 367 562 500 426 390	1107