D. Minimization

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

You've got array A, consisting of n integers and a positive integer k. Array A is indexed by integers from 1 to n.

You need to permute the array elements so that value

became minimal possible. In particular, it is allowed not to change order of elements at all.

Input

The first line contains two integers n, k ($2 \le n \le 3 \cdot 10^5$, $1 \le k \le min(5000, n - 1)$).

The second line contains n integers $A[1], A[2], ..., A[n]$ ($-10^9 \le A[i] \le 10^9$), separate by spaces — elements of the array A.

Output

Print the minimum possible value of the sum described in the statement.

Examples

input
3 2 1 2 4
output
1

input
5 2 3 -5 3 -5 3
output
0

input
6 3 4 3 4 3 2 5
output
3

Note

In the first test one of the optimal permutations is $1\ 4\ 2$.

In the second test the initial order is optimal.

In the third test one of the optimal permutations is $2\ 3\ 4\ 4\ 3\ 5$.