B. Roma and Changing Signs

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

Roma works in a company that sells TVs. Now he has to prepare a report for the last year.

Roma has got a list of the company's incomes. The list is a sequence that consists of n integers. The total income of the company is the sum of all integers in sequence. Roma decided to perform exactly k changes of signs of several numbers in the sequence. He can also change the sign of a number one, two or more times.

The operation of changing a number's sign is the operation of multiplying this number by -1.

Help Roma perform the changes so as to make the total income of the company (the sum of numbers in the resulting sequence) maximum. Note that Roma should perform **exactly** k changes.

Input

The first line contains two integers n and k $(1 \le n, k \le 10^5)$, showing, how many numbers are in the sequence and how many swaps are to be made.

The second line contains a **non-decreasing** sequence, consisting of n integers a_i $(|a_i| \le 10^4)$.

The numbers in the lines are separated by single spaces. Please note that the given sequence is sorted in non-decreasing order.

Output

In the single line print the answer to the problem — the maximum total income that we can obtain after exactly k changes.

Examples

input
3 2 -1 -1 1
output
3

input
3 1 -1 -1 1
output
1

Note

In the first sample we can get sequence `[1, 1, 1]`, thus the total income equals 3.

In the second test, the optimal strategy is to get sequence `[-1, 1, 1]`, thus the total income equals 1.