Min Product Array

Problem Description

The task is to find the minimum sum of Products of two arrays of the same size, given that k modifications are allowed on the first array. In each modification, one array element of the first array can either be increased or decreased by 2.

Note- the product sum is Summation (A[i]*B[i]) for all i from 1 to n where n is the size of both arrays

Input Format:

1. First line of the input contains n and k delimited by whitespace

2. Second line contains the Array A (modifiable array) with its values delimited by spaces

3. Third line contains the Array B (non-modifiable array) with its values delimited by spaces

Output Format:

Output the minimum sum of products of the two arrays

Constraints:

1. $1 \leq N \leq 10^5$
2. $0 \leq A[i], B[i] \leq 10^5$
3. $0 \leq K \leq 10^9$

Sample Input and Output

Sr No.	Input	Output
1	3 5 1 2 -3 -2 3 -5	-31
2	5 3 2 3 4 5 4 3 4 2 3 2	25

Explanation

Sample 1:

Here total numbers are 3 and total modifications allowed are 5. So we modified A[2], which is -3 and increased it by 10 (as 5 modifications are allowed). Now final sum will be
(1 * -2) + (2 * 3) + (7 * -5)
-2 + 6 - 35
-31

-31 is our final answer.

Sample 2:

Here total numbers are 5 and total modifications allowed are 3. So we modified A[1], which is 3 and decreased it by 6 (as 3 modifications are allowed).
Now final sum will be
(2 * 3) + (-3 * 4) + (4 * 2) + (5 * 3) + (4 * 2)
6 - 12 + 8 + 15 + 8
25

25 is our final answer.