

Problem : Min Product Array

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

SNo.	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 for 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.

Explanation for 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.

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.