

Potato Love

Time Limit	Memory Limit
1 second	128 MB

Statement

This is a work of fiction. Names, characters, businesses, places, events, locales, and incidents are either the products of the author's imagination or used in a fictitious manner. Any resemblance to actual persons, living or dead, or actual events is purely coincidental.

Mariya Takeuchi's famous ballad plastic love has a lesser known polysaccharide song counterpart, starch love, which has been made into a dating show for potatoes.

As everyone knows, there are male and female potatoes. In this show, there are N groups of potatoes lined up left to right, numbered 1 through N . Each group is wholly male or female.

The host divides the groups of potatoes into *dating mashups*. Each mashup contains at most K groups. Within each mashup, each male potato pairs up with 1 female potato. Of course, this might mean some potatoes are left over. In this case, if there are X unpaired potatoes in the mashup, it creates an unhappiness level of X^2 . The total unhappiness level is the sum of unhappiness levels of each mashup.

As the host, create mashups to minimise the total unhappiness level and return this minimum value.

Input

The first line contains 2 integers N K . The next line contains N integers, $A_1 \dots A_N$. Here $|A_i|$ is the number of potatoes in the i th group. If $A_i \geq 0$ then all potatoes are male. Otherwise the potatoes are female.

Output

Output 1 integer, the minimum unhappiness level.

Sample Input 1

```
3 2
1 -1 2
```

Sample Output 1

```
2
```

Sample Input 2

```
2 1
420 -69
```

Sample Output 2

```
181161
```

Explanation

- For sample 1 [1] [-1 2] is a mashup. The first mashup has unhappiness 1 and the second 1 also. Hence the total unhappiness of these values is 2. [wow such strong data I know right]
- For sample 2 $420^2 + (-69)^2 = 181161$

Constraints

- $1 \leq K \leq N \leq 10^5$
- $-10^4 \leq A_i \leq 10^4$ for all i

Subtasks

Number	Points	Other constraints
1	20	$N \leq 1000$
2	40	$K = N$
3	40	No other constraints