

Save Energy

There are N towns in a line, numbered from 0 to $N - 1$. Starting from town 0, we want to reach town $N - 1$. From town i , we can jump to any town $j > i$ with an energy cost of $(j-i)*A[i] + (j^2 - i^2)*A[i]^2$, where $A[i]$ for all i are given in input.

Find the minimum total energy cost to reach town $N - 1$ from town 0.

Input Format:

The first line contains a single integer, N .

The next line contains N space separated integers, i th integer denoting the value of $A[i]$, $0 \leq i \leq N - 1$.

Output Format:

Output the minimum cost to reach town N .

Constraints:

$$1 \leq N \leq 10^5$$

$$-10^3 \leq A[i] \leq 10^3$$

Sample Input:

```
5
1 -1 2 2 2
```

Sample Output:

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14
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