Problem A. Khaduj and the monic polynomials

Input file:	standard input
Output file:	standard output
Time limit:	1 seconds

Khaduj loves math, especially monic polynomials with integer coefficients. Lately, she found a lot of them in the street, and she likes to determine the beauty of each of them. khaduj thinks that the beauty of a monic polynomial is the difference between the sum of squares of its non-leading coefficients and the sum of squares of its zeros. More formally:
if P is a monic polynomial of degree $n > 1$ and $a_0, a_2 ... , a_{n-1}$ its coefficients such that:

$$P(X) = X^n + a_{n-1}X^{n-1} + a_{n-2}X^{n-2} + ... + a_1X_1 + a_0$$

And $z_1, z_2, ... z_n$ are the zeros of P (counted by their multiplicity). The beauty $B(P)$ of P is:

$$B(P) = (a_0^2 + a_1^2 + ... + a_{n-1}^2) - (z_1^2 + z_2^2 + ... + z_n^2)$$

Write a program that computes the beauty of a monic polynomial to help khaduj in checking her calculations.

Note: A monic polynomial is a polynomial where its leading coefficient (the coefficient of highest degree) is equal to 1. For example $P(X) = X^2 + 3$ is a monic polynomial because the coefficient of X^2 is 1. $P(X) = 5X^3 + X^2 + 2X + 1$ is not a monic polynomial since the coefficient of X^5 does not equal to 1.

Input

The first line of the input contains one integer n $(2 \le n \le 100)$ the degree of the monic polynomial. The second line contains n integers $a_0\ a_1 ... a_{n-1}$ $(-10^6 \le a_i \le 10^6\ \forall i \in [0, n-1])$ the coefficients of the polynomial where a_i is the coefficient of the monom X^i. Because the polynomial is monic the coefficient of X^n is equal to 1.

Output

Print one integer number, the beauty of the polynomial. It can be proven that the beauty of a monic polynomial of integer coefficients is always an integer.

Example

Standard input	Standard output
3 4 -7 2	51
2 1 1	3

Explanation

Given the coefficients 4 -7 2, the monic polynomial is:

$$P(X) \ = \ X^3 + 2X^2 - 7X \ + 4 = (X - 1)(X - 1)(X + 4)$$

Its zeros are $z_1 = 1, z_2 = 1 \, and \, z_3 = \ -4$. 1 is counted two times since the multiplicity of 1 is 2. The beauty of P is:

$$B(P) \ = (4^2 + (-7)^2 + 2^2) - (1^2 + 1^2 + (-4)^2) \ = \ 51$$