Problem I – Problem I

In the advanced kingdom of Techlandia, you have a set of computers that you want to fully connect into a network. To connect any two computers, both need available ports. However, enabling ports on each computer has a cost associated with it, and the more ports you enable, the higher the cost becomes.

The cost to enable k ports on computer i is $a_i \times k^2$, where a_i is a unique coefficient that determines how expensive it is to enable ports on that particular computer.

Your goal is to determine the minimum total cost required to enable enough ports across all computers such that all computers can connect to one another, directly or indirectly.

Given the number of computers and the costs associated with enabling ports on each computer, find the minimum total cost to enable enough ports such that any computer can connect to any other.

Input

The first line contains an integer N ($2 \leq N \leq 5x10^5$) — the number of computers.

The second line contains N integers $a_1, a_2, \ldots, a_N$ ($1 \leq a_i \leq 1000$) — the coefficient a_i for each computer i, which defines the cost to enable ports on that computer.

Output

Output a single integer representing the minimum total cost to enable enough ports to ensure that all computers can be fully connected.

Sample input 1	**Sample output 1**
5 1 1 1 1 1	14

Sample input 2	**Sample output 2**
5 1 2 3 4 5	29