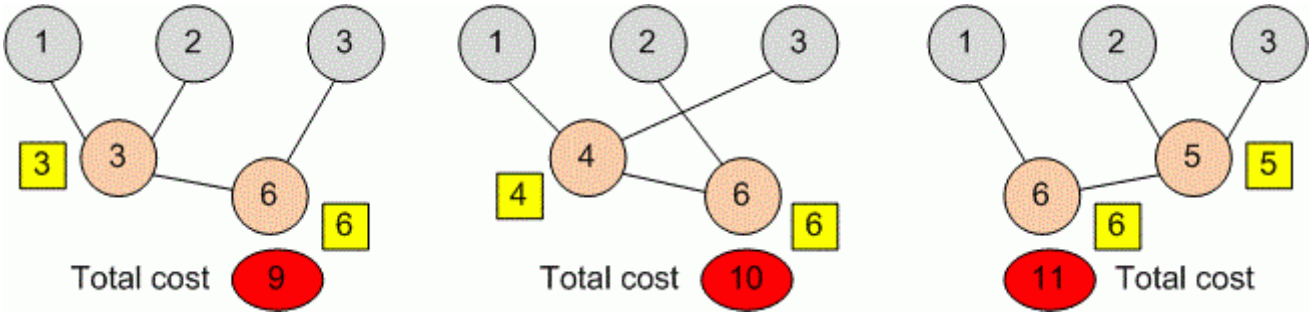
Problem E. F

Time limit 2000 ms
Mem limit 131072 kB

The cost of adding two numbers equals to their sum. For example to add **1** and **10** costs **11**. The cost of addition **1** and **2** is **3**. We can add numbers in several ways:

- **1** + **2** = **3** (cost = **3**), **3** + **3** = **6** (cost = **6**), Total = **9**
- **1** + **3** = **4** (cost = **4**), **2** + **4** = **6** (cost = **6**), Total = **10**
- **2** + **3** = **5** (cost = **5**), **1** + **5** = **6** (cost = **6**), Total = **11**

We hope you understood the task. You must add all numbers so that the total cost of summation will be the smallest.



Input

First line contains positive integer **n** (**2** ≤ **n** ≤ 10^5). Second line contains **n** nonnegative integers, each no more than 10^5.

Output

Print the minimum total cost of summation.

Sample 1

Input	Output
3 1 2 3	9