SAC '22 Code Challenge 1 P4 - That Problem

Time limit: 1.0s **Memory limit:** 256M

After fiddling with numbers for too long, Mr. DeMello has decided to work with spooky arrays! However, he is not very good with them; he has had a question on his mind for a while but cannot solve it, so he asks you for help:

> Given an array, find the number of valid solutions for $A_i + A_j + A_k = A_l$, where (i, j, k, l) are strictly increasing $(i < j < k < l)$.

Can you help him?

Constraints

For all subtasks:

$1 \leq A_i \leq 100$

Subtask 1 [10%]

$1 \leq N \leq 100$

Subtask 2 [20%]

$1 \leq N \leq 600$

Subtask 3 [70%]

$1 \leq N \leq 100\,000$

Input Specification

The first line will contain N, the number of array elements.

The second line will contain N space-separated integers, A_i, the elements of the array.

Output Specification

Output the number of valid solutions to the given equation $(A_i + A_j + A_k = A_l)$.

Sample Input

```
8
1 1 2 3 1 1 2 3
```

Sample Output

```
4
```

Explanation for Sample Output

The valid solutions are $(i = 1, j = 2, k = 5, l = 8)$, $(i = 1, j = 2, k = 6, l = 8)$, $(i = 1, j = 5, k = 6, l = 8)$, $(i = 2, j = 5, k = 6, l = 8)$.

Note that the indices are 1-indexed.