C. Number of Ways

time limit per test: 2 seconds
memory limit per test: 256 megabytes

You've got array $a[1], a[2], ..., a[n]$, consisting of n integers. Count the number of ways to split all the elements of the array into three contiguous parts so that the sum of elements in each part is the same.

More formally, you need to find the number of such pairs of indices i, j $(2 \le i \le j \le n - 1)$, that $\sum_{k=1}^{i-1} a_k = \sum_{k=i}^{j} a_k = \sum_{k=j+1}^{n} a_k$.

Input

The first line contains integer n $(1 \le n \le 5 \cdot 10^5)$, showing how many numbers are in the array. The second line contains n integers $a[1], a[2], ..., a[n]$ $(|a[i]| \le 10^9)$ — the elements of array a.

Output

Print a single integer — the number of ways to split the array into three parts with the same sum.

Examples

input Copy

```
5
1 2 3 0 3
```

output Copy

```
2
```

input Copy

```
4
0 1 -1 0
```

output Copy

```
1
```

input Copy

```
2
4 1
```

output Copy

```
0
```

Codeforces Round 266 (Div. 2)
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
281284982	Sep/15/2024 01:18	Accepted

→ Problem tags

binary search, brute force, data structures, dp, two pointers, *1700

No tag edit access

→ Contest materials

- Announcement
- Tutorial