

3-tuples

You are given N positive integers, a_1, \dots, a_N .

How many tuples (i, j, k) of 3 distinct integers between 1 and N (inclusive) are there such that $a_i + a_j + a_k$ is divisible by 3?

Input Format

Input is given from Standard Input in the following format:

N
 $a_1 \dots a_N$

Constraints

- $3 \leq N \leq 10^5$
- $1 \leq a_i \leq 10^9$ ($1 \leq i \leq N$)
- All values in input are integers.

Output Format

Output a single integer, the number of different tuples to satisfy the above condition.

Sample Input 0

```
3
1 2 3
```

Sample Output 0

```
6
```

Explanation 0

There are 6 different tuples to meet the condition.

- (1, 2, 3)
- (1, 3, 2)
- (2, 1, 3)
- (2, 3, 1)
- (3, 1, 2)
- (3, 2, 1)

Sample Input 1

```
3
1 4 5
```

Sample Output 1

```
0
```

Explanation 1

There are no tuples to satisfy the condition.

Sample Input 2

```
9
1 2 3 4 5 6 7 8 9
```

Sample Output 2

```
180
```