7048 Coprime

There are n people standing in a line. Each of them has a unique **id** number.

Now the Ragnarok is coming. We should choose 3 people to defend the evil. As a group, the 3 people should be able to communicate. They are able to communicate if and only if their id numbers are pairwise coprime or pairwise not coprime. In other words, if their **id** numbers are a, b, c, then they can communicate if and only if $[(a,b) = (b,c) = (a,c) = 1]$ or $[(a,b) \neq 1$ and $(a,c) \neq 1$ and $(b,c) \neq 1]$, where (x,y) denotes the greatest common divisor of x and y.

We want to know how many 3-people-groups can be chosen from the n people.

Input

The first line contains an integer T ($T \leq 5$), denoting the number of the test cases.

For each test case, the first line contains an integer n ($3 \leq n \leq 10^5$), denoting the number of people. The next line contains n distinct integers a_1, a_2, ..., a_n ($1 \leq a_i \leq 10^5$) separated by a single space, where a_i stands for the id number of the i-th person.

Output

For each test case, output the answer in a line.

Sample Input

```
1
5
1 3 9 10 2
```

Sample Output

```
4
```