Project Euler #46: Goldbach's other conjecture

This problem is a programming version of Problem 46 from projecteuler.net

It was proposed by Christian Goldbach that every odd composite number can be written as the sum of a prime and twice a square. $$\begin{align*} 9 &= 7 + 2\times1^2 \\ 15 &= 7 + 2 \times 2^2 \\ 21 &= 3 + 2 \times 3^2 \\ 25 &= 7 + 2 \times 3^2 \\ 27 &= 19 + 2 \times 2^2 \\ 33 &= 31 + 2 \times 1^2 \end{align*}$$

It turns out that the conjecture was false as you'll discover some values can't be represented as a sum of prime and twice a square.
You are given N, print the number of ways N can be represented as a sum of prime and twice a square.
Example 15 can be represented in two ways as $15 = 7 + 2 \times 2^2$ and $15 = 13 + 2 \times 1^2$

Input Format
The first line contains an integer T , i.e., number of test cases.
Next T lines will contain an integer N.

Output Format
Print the values corresponding to each test case.

Constraints
$1 \le T \le 100$
$9 \le N < 5 \times 10^5$
$N \in \{\text {odd composite number}\}$

Sample Input

```
2
9
15
```

Sample Output

```
1
2
```