Project Euler #46: Goldbach's other conjecture

Problem Statement

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.

$$9 = 7 + 2 \times 1^2$$
$$15 = 7 + 2 \times 2^2$$
$$21 = 3 + 2 \times 3^2$$
$$25 = 7 + 2 \times 3^2$$
$$27 = 19 + 2 \times 2^2$$
$$33 = 31 + 2 \times 1^2$$

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.
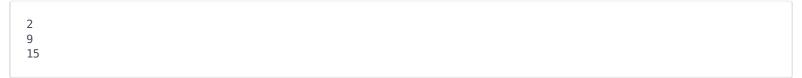Next T lines will contain an integer N.

Output Format
Print the values corresponding to each test case.

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

Sample Input

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2
9
15
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Sample Output

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1
2
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