# 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.

$$9 = 7 + 2 \times 1^{2}$$

$$15 = 7 + 2 \times 2^{2}$$

$$21 = 3 + 2 \times 3^{2}$$

$$25 = 7 + 2 \times 3^{2}$$

$$27 = 19 + 2 \times 2^{2}$$

$$33 = 31 + 2 \times 1^{2}$$

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.

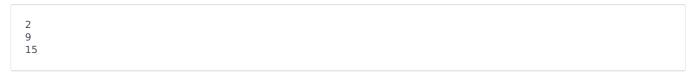
#### **Constraints**

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

#### **Output Format**

Print the values corresponding to each test case.

## **Sample Input**



## **Sample Output**

