# 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.

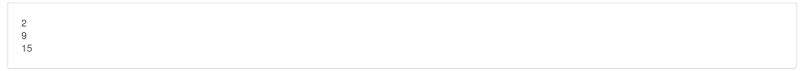
# **Output Format**

Print the values corresponding to each test case.

### **Constraints**

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

### **Sample Input**



# **Sample Output**

