

Pythagorean Triple Counting (LTL)

There are already some SPOJ problems related to [Pythagorean triples](#). Here is another one: Given an integer n , calculate the number $p(n)$ of Pythagorean triples with at least one cathetus of length n .

Input

Input starts with a positive integer $t \leq 1000$, the number of testcases.

Each of the following t lines contains a positive integer $n \leq 10^{15}$.

Output

For every n print the value of $p(n)$ in a single line.

Example

Input:

3
4
5
6

Output:

1
1
1

Explanation: The only Pythagorean triple that has a cathetus with length 4 is (3,4,5), so $p(4)=1$.

Note: If your solution is fast enough, you may try the [classical version](#) with identical test data, but stricter time limit. I also recommend to solve problems [WPC5A](#) and [CATHETEN](#) first.