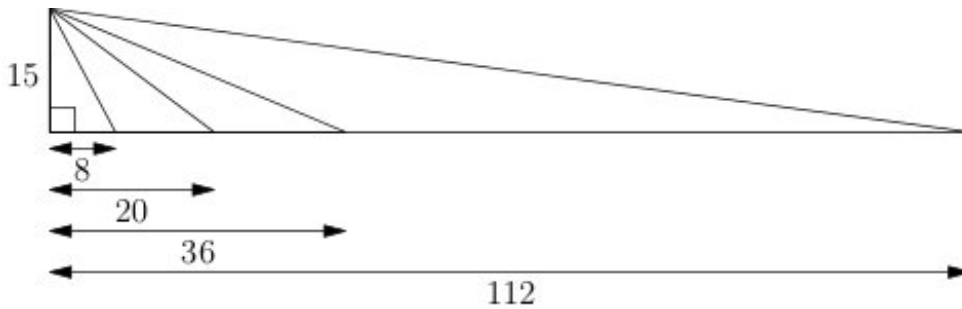


Shared cathetus (easy)

For any integer n , we define $F(n)$ as the number of ways in which n can be the cathetus (leg) of a Pythagorean triangle.

For example, there is exactly four Pythagorean triangles with 15 as a length for a cathetus.



(8 15 17), (15 20 25), (15 36 39), (15 112 113)

Thus $F(15) = 4$.

Input

The first line of input contains an integer T , the number of test cases.

Each of the next T lines contains a single integer n .

Output

For each test case, print $F(n)$ on a single line.

Example

Input:

3
3
5
10
15

Output:

1
1
4

Constraints

$0 < T < 10^5$
 $0 < n < 10^9$

For your information, my C code ran in 0.08s, whereas my python3 one ran in 0.90s. (Edit 2017-02-11, after compiler changes)