Project Euler #218: Perfect right-angled triangles

This problem is a programming version of Problem 218 from projecteuler.net

Consider the right angled triangle with sides $a = 7$, $b = 24$ and $c = 25$. The area of this triangle is 84, which is divisible by the perfect numbers 6 and 28.
Moreover it is a primitive right angled triangle as $gcd(a, b) = 1$ and $gcd(b, c) = 1$.
Also c is a perfect square.

We will call a right angled triangle perfect if

- it is a primitive right angled triangle
- its hypotenuse is a perfect square

We will call a right angled triangle super-perfect if

- it is a perfect right angled triangle and
- its area is a multiple of the perfect numbers 6 and 28.

How many perfect right-angled triangles with $c \leq n$ exist that are not super-perfect?

Input Format

First line of each test file contains a single integer q that is the number of queries. q lines follow, each containing an integer n - an upper bound of the largest side of the triangle.

Constraints

- $1 \leq q \leq 100000$
- $25 \leq n \leq 2 \times 10^{18}$

Output Format

Print exactly q lines with a single integer on each: an answer to the corresponding query.

Sample Input 0

```
1
25
```

Sample Output 0

```
0
```

Explanation 0

As we can see from the problem statement, the only perfect triangle with $c \leq 25$ is super-perfect.