Project Euler #94: Almost equilateral triangles

Problem Statement

This problem is a programming version of Problem 94 from projecteuler.net

It is easily proved that no equilateral triangle exists with integral length sides and integral area. However, the *almost equilateral triangle* $5 - 5 - 6$ has an area of 12 square units.

We shall define an *almost equilateral triangle* to be a triangle for which two sides are equal and the third differs by no more than one unit.

Find the sum of the perimeters of all *almost equilateral triangles* with integral side lengths and area and whose perimeters do not exceed N.

Input Format

First line contains T, denoting the number of testcases.
Next T lines contains N.

Constraints

$2 \leq T \leq 10^5$
$15 \leq N \leq 10^{18}$

Output Format

Output T lines corresponding to T test cases.

Sample Input

```
2
17
51
```

Sample Output

```
16
66
```

Explanation

For first test case we get perimeter $16 - (5 - 5 - 6)$.
Second test case there is another triangle $16 - 17 - 17$ whose area is 120 units.