Assuming that there are N pillars, and we need to put onto the pillars, a bunch of balls, i.e., numbered $1, 2, 3, 4, 5, \ldots$, in increasing order such that on the same pillar, the sum of the numbers of any 2 adjacent balls is a *cube* (k^3 for positive integer k). Calculate the maximum number of balls that can be placed on the N pillars. You may put the ball on any pillar, but no balls can be skipped. The process stops once you cannot not place a ball.

Input

A number of of inputs (≤ 1000), each with N ($0 < N \leq 2000000$).

Output

For each input, output the total number of balls on one line.

Sample Input

```
1
2
8
```

Sample Output

```
1
2
15
```