COMPETITIE

PROG-A-THON

11: VIA origin

Time limit: 8.000 seconds

At **via** the members celebrate the birthday of the association every year. However, as the members tend to drink too much during these celebrations nobody can remember when **via** was founded exactly. Being computer scientists, they do remember some properties of this date: the number of days **via** exists (D), is a perfect square. Furthermore, it is the greatest possible perfect square that one can form as a product of distinct numbers less than or equal to n. As computer scientists we are only interested in an approximation of the amount of days **via** exists, so the value we are looking for is D modulo $1,000,000,007$. Note that we want the largest D, not in the largest D modulo $1,000,000,007$.

Input

Every test case is a single value, n, which is an integer larger or equal to 1 and smaller than or equal to $10,000,000$. An input can contain multiple test cases. The end of the input is indicated by a line containing 0.

Output

For each test case, output the number of days ago the VIA was founded, modulo 1,000,000,007, one per line. For the last input line of 0 no output should be emitted.

Sample input 1

```
5
2893874
4050293
0
```

Sample output 1

```
4
730764002
226014982
```