# 1158   CubesSquared

Cube Factory Ltd is an enterprise that sells *hcubes* (short of "harmonic cubes"), a very fashionable item nowadays providing great profits for his owner, Mr. Tesseract (his friends call him Mr.T).

Mr. T just bought a very large space to fit his increasing stock of *hcubes*. *Hcubes* have a plain cube format and are not hard to stock. However, Mr. T has a (rather harmless?) mania: he only admits two valid ways to pile them: (a) in cube format or (b) in squared pyramids (i.e., where each new step holds an increasing square number of elements).

One example of each type (holding, respectively, $4^3 = 64$ *hcubes* and $1^2 + 2^2 + 3^2 + 4^2 = 30$ *hcubes*):
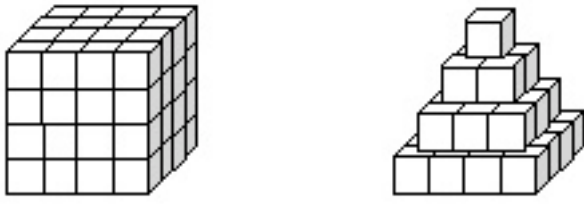
Given N *hcubes*, find the minimal number of valid piles to stock them according to Mr. T rules.

Example: to stock 38 *hcubes* we only need two piles: e.g., one cube of height 2 (holding 8 *hcubes*) and a pyramid of height 4 (holding 30 *hcubes*).

Input

The input file contains several lines. Each line consists of a single integer representing the number N of *hcubes* ($0 \leq N \leq 400.000$). The file ends in a line with the number '-1'.

Output

For each N in the input file, a line containing the corresponding result.

Sample Input

```
38
60
12
39101
-1
```

Sample Output

```
2
2
4
4
```