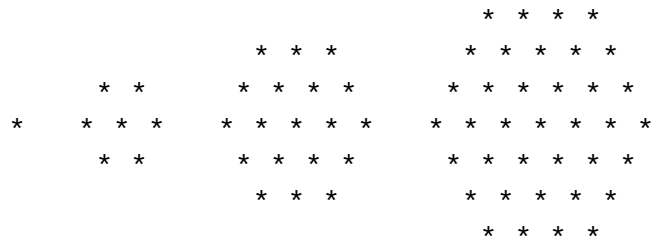
Hyper Hexagonality X17088_en

An old Measharan proverb says that a good day must include a reference to hexagons. Ronald Zynoulus has received his prize from Gill Bytes, in a huge amount of coins. Thus, he has started to arrange them in hexagonal patterns on his game board. He called a number N *hexagonal* iff there is a regular hexagon on a hex grid which contains exactly N hexes. Thus, the first four hexagonal numbers are: 1, 7, 19, 37.



Ronald wants to use all of his K coins to build such hexagons. Each non-negative integer can be written as a sum of hexagonal numbers, for example, $27 = 19 + 7 + 1$. Of course, he would like to use as few hexagons as possible. He called the smallest number of hexagonal components of K the *hyperhexagonality* of K.
Your task is to calculate the hyperhexagonality of the given number.

Input

Input consists of T cases ($T \leq 100$). Each case is a single number K, $1 \leq K \leq 10^{12}$. The input ends with 0.

Output

For each K in the input, output its hyperhexagonality.

Sample input	Sample output
1 6 7 19 27 0	1 6 1 1 3

Problem information

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