

## 7708 Cubes

Write a program that takes a natural number  $N$  and decomposes it as a sum of the minimum number of exact natural cubes. The program should find  $m_1, m_2, \dots, m_k$ , such that each  $m_i$  is a natural number,  $m_1^3 + m_2^3 + \dots + m_k^3 = N$ , and  $k$  is minimal.

### Input

The input file contains several test cases, each of them consists of only a line that contains the number  $N$  ( $1 \leq N \leq 44,777,444$ ).

### Output

For each test case, your program should write exactly two lines. The first line contains the number  $k$  — the minimum number of natural cubes. The second line contains  $k$  space-separated natural numbers in non-increasing order— that raised to the power of 3 sum to  $N$ .

### Sample Input

```
42
43
```

### Sample Output

```
7
2 2 2 2 2 1 1
3
3 2 2
```