Longwood Invitational (Fall 2011)

Problem 5: Curious Cubes (by Robert Marmorstein, Longwood University)

The *cube root* function is defined as follows:

*Given a non-negative real number n, the real cube root of n is a number x such that x*x*x = n.*

The *integer cube root* of a number n is defined to be the floor of the real-valued cube root. For example, the integer cube root of three is one, because one is the largest integer which has a cube less than three. Similarly, the integer cube root of ten is two.

Problem

Write a program that calculates integer cube roots.

Input

The input will consist of a series of non-negative integers separated by white space. The numbers will be no larger than 4,000,000,000. The input will be terminated by the end of the file.

Output

Your program should output a space-separated list containing the integer cube roots of each of the numbers in the input. The output should be terminated by a single end-of-line character.

Examples

Input:
```
1 2 5 9 17 30
40 80   100 26
```

Output:
```
1 1 1 2 2 3 3 4 4 2
```

Input:
```
0
3
10
99
```

Output:
```
0 1 2 4
```