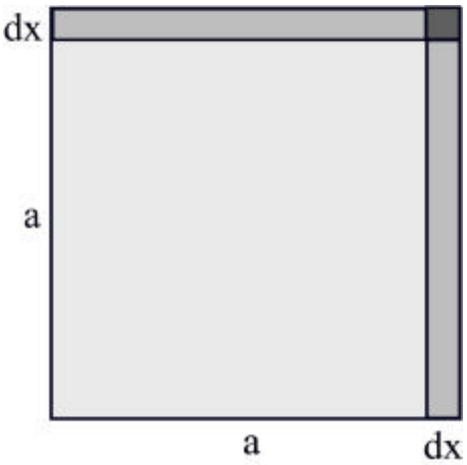
Problem A
R U Kidding Mr. Feynman?

Input: Standard Input
Output: Standard Output

Richard P. Feynman was a musician, artist, scientist, teacher and Nobel lauriet. He contributed to the development of the atomic bomb, expanded the understanding of quantumelectrodynamics, translated Mayan hieroglyphics, and cut to the heart of the Challenger disaster. But beyond all of that, Richard Feynman was a unique and multi-faceted individual and he was famous for his unbelievable stories, unusual life style and his popular books and lectures on mathematics and physics. Once, in Brazil, Feynman got into a kind of a competition with a native to see who could do faster simple aritmethics, Feynman or an abacus (aka an manual calculator machine)! Feynman lost in operations such as addition and multiplication but he won in cubic roots. Given the number **1729.03** he got the result of **12.002** at the end of a few seconds while his oponent got **12.0**!



The analog procedure to the Square Root is:

$$n = a + dx \ldots (1)$$

$$\Rightarrow n = (a + dx)^2$$
$$\Rightarrow n = a^2 + 2 * a * dx + (dx)^2$$
$$\Rightarrow n = a^2 + 2 * a * dx$$
$$\Rightarrow dx = ½ * (n - a^2)/a$$

Considering an square of side **'a'**, with area **'a*a'**, if you do a small increment of **'dx'** on each side , you will get a square with area of the square with side **'a'** (Light gray) plus the area of the two small rips (Medium Gray) on top plus the area of the small square(dark gray). Since this is only an approximated method, we can ignore this small area ($(dx)^2$). Then just get value of dx, and substitute in (1).

Example,

To calculate **17**, as Feynman has an excelent memory, he knows 'all' perfect squares (as well cubes), he knows that **4*4** = **16** then he just use the method above and calculate **4+1/8** that equals **4.125** (not very bad as **17= 4.123...**)

As Feynman is very lazy, and he doesn't like subtractions at all, he doesn't use negative dx.... (it's boring..)

Your Task is to generalize this procedure to the cubic root, and HELP FEYNMAN! (Just do it, What do you care what other people think?)

Input

The input contains a positive floating-point number per line in the inteval **[1…1000000]** (inclusive). The last line of the input file contains a number **0** (zero), This zero should not be processed.

Output

For each line of input print the value of the cubic root approximated by the method explained above. Print the value rounded upto four digits after the decimal point.

Sample Input	Output for Sample Input
1729.0300 64.0000 63.9990 0	12.0024 4.0000 4.3703

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