Problem B: Three powers

Consider the set of all non-negative integer powers of 3.

$$S = \{ 1, 3, 9, 27, 81, \dots \}$$

Consider the sequence of all subsets of S ordered by the value of the sum of their elements. The question is simple: find the set at the n-th position in the sequence and print it in increasing order of its elements.

Each line of input contains a number n, which is a positive integer with no more than 19 digits. The last line of input contains 0 and it should not be processed.

For each line of input, output a single line displaying the n-th set as described above, in the format used in the sample output.

Three Powers of the Telescope

A telescope acts as an aid to our eyes in three ways.
These are called Light Gathering Power, Magnification and Resolution.

Click on the three links below to learn more about the three powers of the telescope.

Light Gathering Power
The prime function of a telescope is to gather light. The larger the telescope, the more light it can gather. Telescopes are rated by their aperture so a 152mm (6inch) instrument has a lens or mirror which is 152mm in diameter.

Magnification - How Big
Resolution is a telescope's ability to reveal fine detail; especially low-contrast detail such as the ability to split binary stars and reveal details on the Solar System's objects.

Resolution - How Much
Simply changing the eyepiece will vary the magnification that a telescope provides. Magnification is equal to the telescope's focal length divided by the eyepiece's focal length.

Sample input

```
1
7
14
783
1125900981634049
0
```

Output for sample input

```
{ }
{ 3, 9 }
{ 1, 9, 27 }
{ 3, 9, 27, 6561, 19683 }
{ 59049, 3486784401, 205891132094649, 717897987691852588770249 }
```

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