Self Numbers

Background

In 1949 the Indian mathematician D.R. Kaprekar discovered a class of numbers called *self-numbers*. For any positive integer *n*, define *d(n)* to be *n* plus the sum of the digits of *n*. (The *d* stands for *digitadition*, a term coined by Kaprekar.) For example:

  d(75) = 75 + 7 + 5 = 87

Given any positive integer n as a starting point, you can construct the infinite increasing sequence of integers *n, d(n), d(d(n)), d(d(d(n))), ...* For example, if you start with 33, the next number is 33 + 3 + 3 = 39, the next is 39 + 3 + 9 = 51, the next is 51 + 5 + 1 = 57, and so you generate the sequence

  33, 39, 51, 57, 69, 84, 96, 111, 114, 120, 123, 129, 141, ...

The number *n* is called a *generator* of *d(n)*. In the sequence above, 33 is a generator of 39, 39 is a generator of 51, 51 is a generator of 57, and so on.

Some numbers have more than one generator: For example, 101 has two generators, 91 and 100. A number with no generators is a *self-number*. There are thirteen self-numbers less than 100: 1, 3, 5, 7, 9, 20, 31, 42, 53, 64, 75, 86, and 97.

Problem

Write a program to output all positive self-numbers less than 1000000 in increasing order, one per line.

Input

There is no input.

Output

All positive self-numbers less than 1000000 in increasing order, one per line.