PROBLEM #4:

Chupacabra

Description:

A number **z** is called a **Chupacabra Number** if it has a pair of factors, **a** and **b**, where **a*b=z**, and together, **a** and **b** have exactly the same digits, in exactly the same quantities, as **z**. None of the numbers **z**, **a** or **b** can have leading zeros.
Here are some more examples:

126 = 6 * 21
10251 = 51 * 201
702189 = 9 * 78021
29632 = 32 * 926

Given a number **X**, find the smallest Chupacabra Number which is greater than or equal to **X**.

Input:

There will be several test cases in the input. Each test case will consist of a single line containing a single integer **X** (**10 ≤ X ≤ 1,000,000**). The input will end with a line with a single **0**.

Output:

For each test case, output a single integer on its own line, which is the smallest Chupacabra Number which is greater than or equal to **X**. Output no extra spaces, and do not separate answers with blank lines.

Sample:

Input	Output
10 126 127	126 126 153

5000 0	6880