3262 - Different Digits

Asia - Shanghai - 2004/2005

Given a positive integer *n*, your task is to find a positive integer *m*, which is a multiple of *n*, and that *m* contains the least number of different digits when represented in decimal. For example, number 1334 contains three different digits 1, 3 and 4.

Input

The input consists of no more than 50 test cases. Each test case has only one line, which contains a positive integer *n* ($1 \leq n < 65536$). There are no blank lines between cases. A line with a single `0' terminates the input.

Output

For each test case, you should output one line, which contains *m*. If there are several possible results, you should output the smallest one. Do not output blank lines between cases.

Sample Input

```
7
15
16
101
0
```

Sample Output

```
7
555
16
1111
```

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