

Given a positive integer n , write a program to find out a nonzero multiple m of n whose decimal representation contains only the digits 0 and 1. You may assume that n is not greater than 200 and there is a corresponding m containing no more than 100 decimal digits.

Input

The input file may contain multiple test cases. Each line contains a value of n ($1 \leq n \leq 200$). A line containing a zero (0) terminates the input.

Output

For each value of n in the input print a line containing the corresponding value of m . The decimal representation of m must not contain more than 100 digits. If there are multiple solutions for a given value of n , any one of them is acceptable.

Sample Input

```
2
6
19
0
```

Sample Output

```
10
100100100100100100
111111111111111111
```