7381 The Magical 3

Three is a magic number.
Yes it is; it's a magic number.
Somewhere in the ancient, mystic trinity,
You get three as a magic number.
— Schoolhouse Rock

There's no doubt about it, three is a magical number. Two's company, but three's a crowd, no one ever talks about 2 blind mice, and there are three members in an ACM ICPC team.

According to Pythagoras and the Pythagorean School, the number 3 — which they called *triad* — is the noblest of all digits, as it is the only positive integer to equal the sum of all of the positive integers below it ($1 + 2 = 3$), and it is the only positive integer whose sum with those below equals the product of them and itself ($1 + 2 + 3 = 1 \times 2 \times 3$).

Even more magically, almost all integers can be represented as a number that ends in 3 in some numeric base, sometimes in more than one way. Consider the number 11, which is represented as 13 in base 8 and 23 in base 4. For this problem, you will find the smallest base for a given number so that the number's representation in that base ends in 3.

Input

The input file contains several test cases.

Each test case will consist of a single line with a single integer n ($1 \leq n < 2^{31}$).

Output

For each test case, print on a single line the smallest base for which the number has a representation that ends in 3. If there is no such base, print instead '`No such base`'.

Sample Input

```
11
42
2
3
9876
2103723004
```

Sample Output

```
4
13
No such base
4
9
2103723001
```