Problem TOTIENT: Euler's Totient Function

As you might know, Euler's totient function $\phi(n)$ is defined as the number of positive integers $a, a \leq n$ that are relatively prime to n. Two numbers are relatively prime if their greatest common divisor is 1. If the prime factorization of $n = p_1^{e_1} p_2^{e_2} \ldots p_j^{e_j}$ is known the value of $\phi(n)$ can be calculated via the following formula:

$$\Pi_{i=1}^{j}(p_i - 1)p_i^{e_i - 1}$$

Now your task is to calculate the positive integers n which fulfill the equation $\phi(n) = x$ for a given x. *Hint:* The solution set of the equation $\phi(n) = x$ can be constructed by at most 16 different prime factors. A prime can be used several times.

Input

The input consists of a number of lines. On each line there is a single positve integer with no leading zeros. There are no spaces in the input. All numbers will be positive integers smaller than 1000000000.

Output

For each line of input there should be one line of output. If the equation $\phi(n) = x$ has a solution, print all its solutions on a single line. The solutions should be printed in ascending order and should be seperated by a space. If there is no solution to the equation, print: `No solution.`

Sample Input 1

```
1
3
6
```

Sample Output 1

```
1 2
No solution.
7 9 14 18
```