CCC '01 J2 - Mod Inverse

Canadian Computing Competition: 2001 Stage 1, Junior #2

In many cryptographic applications the Modular Inverse is a key point. This question involves finding the modular inverse of a number.

Given $0 < x < m$, where x and m are integers, the modular inverse of x is the unique integer n, $0 < n < m$, such that the remainder upon dividing $x \times n$ by m is 1.

For example, $4 \times 13 = 52 = 17 \times 3 + 1$, so the remainder when 52 is divided by 17 is 1, and thus 13 is the inverse of 4 modulo 17.

You are to write a program which accepts as input the two integers x and m, and outputs either the modular inverse n, or the statement `No such integer exists.` if there is no such integer n.

Constraints

$m \leq 100$

Sample Input 1

```
4
17
```

Sample Output 1

```
13
```

Sample Input 2

```
6
10
```

Sample Output 2

```
No such integer exists.
```