NOIP '99 P2 - Palindrome Numbers

Time limit: 1.0s **Memory limit:** 64M

If a number where the first digit is not zero reads the same from left to right as from right to left, we call it a palindrome number.

For example, given the decimal number 56, the sum of $56 + 65$ (i.e. 56 read from right to left) is 121 which is a palindrome number.

Another example for decimal number 87:

STEP 1: $87 + 78 = 165$

STEP 2: $165 + 561 = 726$

STEP 3: $726 + 627 = 1353$

STEP 4: $1353 + 3531 = 4884$

A step here refers to one addition done in base N. The above example used 4 steps to get a palindrome number, 4884.

Given the base N ($2 \leq N \leq 10$ or $N = 16$) and the initial number M (less than or equal to 100 digits) in base N, find the minimum steps to get a palindrome number. If it is impossible to get a palindrome number in less than or exactly 30 steps, output `Impossible!`.

Input Specification

The first line will contain N.

The second line will contain M.

Output Specification

If you can get a palindrome number within 30 steps, output the number of steps in the form of `STEP=ans`, where `ans` is the minimum number of steps to get a palindrome number. Otherwise, output `Impossible!`.

Sample Input

```
10
87
```

Sample Output

```
STEP=4
```

Problem translated to English by **Tommy_Shan**.