Palindrom Numbers

Time Limit: 2000 ms Memory Limit: 65536 KB

Statement of the Problem

We say that a number is a palindrom if it is the sane when read from left to right or from right to left. For example, the number 75457 is a palindrom.

Of course, the property depends on the basis in which is number is represented. The number 17 is not a palindrom in base 10, but its representation in base 2 (10001) is a palindrom.

The objective of this problem is to verify if a set of given numbers are palindroms in any basis from 2 to 16.

Input Format

Several integer numbers comprise the input. Each number 0 < n < 50000 is given in decimal basis in a separate line. The input ends with a zero.

Output Format

Your program must print the message Number i is palindrom in basis where I is the given number, followed by the basis where the representation of the number is a palindrom. If the number is not a palindrom in any basis between 2 and 16, your program must print the message Number i is not palindrom.

Sample Input

```
17
19
0
```

Sample Output

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Number 17 is palindrom in basis 2 4 16
Number 19 is not a palindrom
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