20.   10235 - Simply Emirp

Time limit: 3.000 seconds

<div style="background:#3a6fb0;color:#fff;padding:8px;text-align:center;font-weight:bold;">Problem G: Simply Emirp</div>

An integer greater than 1 is called a prime number if its only positive divisors (factors) are 1 and itself. Prime numbers have been studied over the years by a lot of mathematicians. Applications of prime numbers arise in Cryptography and Coding Theory among others.

Have you tried reversing a prime ? For most primes, you get a composite (43 becomes 34). *An Emirp (Prime spelt backwards) is a Prime that gives you a different Prime when its digits are reversed*. For example, 17 is *Emirp* because 17 as well as 71 are Prime. In this problem, you have to decide whether a number *N* is Non-prime or Prime or *Emirp*. Assume that *1<N<1000000*.

Interestingly, Emirps are not new to NTU students. We have been boarding 199 and 179 buses for quite a long time!

Input

Input consists of several lines specifying values for *N*.

Output

For each *N* given in the input, output should contain one of the following:

1. "*N* is not prime.", if *N* is not a Prime number.
2. "*N* is prime.", if *N* is Prime and *N* is not *Emirp*.
3. "*N* is emirp.", if *N* is *Emirp*.

Sample Input

```
17
18
19
179
199
```

Sample Output

```
17 is emirp.
18 is not prime.
19 is prime.
179 is emirp.
199 is emirp.
```