Sieve of Eratosthenes   P89124_en

Given several natural numbers, tell which are prime and which are not.

Input

Input consists of (possibly, many) natural numbers $n \leq 10^6$.

Output

For each n, tell if it is prime or not.

Observation

Use the Sieve of Eratosthenes.

Sample input 1

```
9
23
1
10000
```

Sample output 1

```
9 is not prime
23 is prime
1 is not prime
10000 is not prime
```

Problem information

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Generation: 2026-01-25T12:18:02.501Z