

Nth Prime

Given an integer $1 \leq N \leq 100000$, you have to print the Nth prime number.

Score is the length of your source.

Input

The input file consists of series of numbers one in each line. The input is terminated by EOF.

Output

The Nth prime number.

Example

Input:

```
3
5
7
11
```

Output:

```
5
11
17
31
```

PS: Timit limit and test cases are modified on **05.10.2010** to encourage more short solution.