

# Next Prime (Hard)

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

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## Brute Force Practice 3 — Hard Version

You love prime numbers. You own a number, but you suspect it might not be prime. You want a prime number, but it must be at least as large as the number you currently own. Find the smallest number that satisfies those conditions.

## Input Specification

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The first line will have the integer  $N$  ( $1 \leq N \leq 10^{18}$ ).

## Output Specification

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Print the number you want.

## Sample Input

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4

## Sample Output

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5