Prime or Not?

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Recommended Time: 13 mins Points: 50 15 test cases (5 samples)

Coding EASY Math Number Theory Algorithms Problem Solving Core CS

Determine whether a number is prime. If it is not, partially factor the number to determine its smallest divisor greater than *1*.

Example

n = 24

The number *24* is not prime: its divisors are *[1, 2, 3, 4, 6, 8, 12, 24]* and the smallest divisor greater than *1* is *2*.

Function Description

Complete the function *isPrime* in the editor below.

isPrime has the following parameter(s):

long n: a long integer to test

Returns

int: if the number is prime, return *1*; otherwise returns the smallest divisor greater than *1*

Constraints

- $2 \leq n \leq 10^{12}$

▼ Input Format for Custom Testing

Input from stdin will be processed as follows and passed to the function.

The only line of input contains the long integer to analyze, *n*.

▼ Sample Case 0

Sample Input 0

```
STDIN       Function
-----       --------
2       →   n = 2
```

Sample Output 0

```
1
```

Explanation 0

As *2* is a prime number, the function returns *1*.

▼ Sample Case 1

Sample Input 1

```
STDIN       Function
-----       --------
4       →   n = 4
```

Sample Output 1

```
2
```

Explanation 1

Since *4* is not a prime number, and the factors of 4 are *[1, 2, 4]*, the function returns the smallest factor of *4* greater than *1*.