A. Primal Sport

time limit per test: 1.5 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Alice and Bob begin their day with a quick game. They first choose a starting number $X_0 \geq 3$ and try to reach one million by the process described below.

Alice goes first and then they take alternating turns. In the i-th turn, the player whose turn it is selects a prime number smaller than the current number, and announces the smallest multiple of this prime number that is not smaller than the current number.

Formally, he or she selects a prime $p < X_{i-1}$ and then finds the minimum $X_i \geq X_{i-1}$ such that p divides X_i. Note that if the selected prime p already divides X_{i-1}, then the number does not change.

Eve has witnessed the state of the game after two turns. Given X_2, help her determine what is the smallest possible starting number X_0. Note that the players don't necessarily play optimally. You should consider all possible game evolutions.

Input

The input contains a single integer X_2 ($4 \leq X_2 \leq 10^6$). It is guaranteed that the integer X_2 is composite, that is, is not prime.

Output

Output a single integer — the minimum possible X_0.

Examples

input
14
output
6

input
20
output
15

input
8192
output
8191

Note

In the first test, the smallest possible starting number is $X_0 = 6$. One possible course of the game is as follows:

- Alice picks prime 5 and announces $X_1 = 10$
- Bob picks prime 7 and announces $X_2 = 14$.

In the second case, let $X_0 = 15$.

- Alice picks prime 2 and announces $X_1 = 16$

- Bob picks prime 5 and announces $X_2 = 20$.