CODEFORCES
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PROBLEMS   SUBMIT CODE   MY SUBMISSIONS   STATUS   HACKS   ROOM   STANDINGS   CUSTOM INVOCATION

C. Primes on Interval

time limit per test: 1 second

memory limit per test: 256 megabytes

You've decided to carry out a survey in the theory of prime numbers. Let us remind you that a prime number is a positive integer that has exactly two distinct positive integer divisors.

Consider positive integers a, $a + 1$, ..., b ($a \le b$). You want to find the minimum integer l ($1 \le l \le b - a + 1$) such that for any integer x ($a \le x \le b - l + 1$) among l integers $x, x + 1, ..., x + l - 1$ there are at least k prime numbers.

Find and print the required minimum l. If no value l meets the described limitations, print -1.

Input

A single line contains three space-separated integers a, b, k ($1 \le a, b, k \le 10^6$; $a \le b$).

Output

In a single line print a single integer — the required minimum l. If there's no solution, print -1.

Examples

input	Copy
2 4 2	

output	Copy
3	

input	Copy
6 13 1	

output	Copy
4	

input	Copy
1 4 3	

output	Copy
-1	

Codeforces Round 147 (Div. 2)

Finished

Practice

⭐

→ Virtual participation ⌄

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup ⌄

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win ▾)

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
252378478	Mar/20/2024 04:05	Accepted

→ Problem tags

binary search   number theory
two pointers   *1600

No tag edit access

→ Contest materials

- Announcement   ✕
- Tutorial (ru)   ✕

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The only programming contests Web 2.0 platform
Server time: May/02/2025 02:04:27 (l2).
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