C. Primes on Interval

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

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

→ **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

→ **Problem tags**

binary search | number theory | two pointers | *1600

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial (ru)


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