

# Primes

SEASON 7 – ROUND FOUR



As you know a prime number is a positive integer that has exactly two distinct positive integer divisors.

Consider positive integers  $a, a + 1, \dots, b$  ( $a \leq b$ ). You want to find the minimum integer  $l$  ( $1 \leq l \leq b - a + 1$ ) such that for any integer  $x$

( $a \leq x \leq b - l + 1$ ) among  $l$  integers  $x, x + 1, \dots, x + l - 1$  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

The first row of the file `primes.in` contains of 3 integers – **a, b** and **k**.

## Output

In the output file `primes.out` print a single integer - the required minimum  $l$ . If there's no solution, print -1.

## Constraints

$1 \leq a, b, k \leq 1\,000\,000$

$a \leq b$

**Time limit: 1.0 sec**

**Memory limit: 256 MB**

## Example test

Input ( <code>primes.in</code> )	Output ( <code>prime_test</code> )out)
2 4 2	3
6 13 1	4
1 4 3	-1