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

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

(*a* ≤ *x* ≤ *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**

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 ≤ *a,b,k* ≤ 1 000 000

a ≤ *b*

**Time limit: 1.0 sec**

**Memory limit: 256 MB**

**Example test**

|  |  |
| --- | --- |
| **Input (primes.in)** | **Output (prime\_test)out)** |
| 2 4 2 | 3 |
| 6 13 1 | 4 |
| 1 4 3 | -1 |