Range problem

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Gilfoyle is trying to enter a system and wants to extract all the information stored in it, but the system is well protected. The system not only checks for password but also comes up with a maths problem when someone tries to access it.

The problem is stated as follows.

Consider an array containing all the numbers between a and b(both inclusive) in increasing order. It asks for the minimum length l such that any possible contiguous subarray of length l $(1 \leq l \leq b - a + 1)$ contains at least k prime numbers.

Gilfoyle can crack the password in no time, but wants you to solve the problem because it's too trivial for him. Help him find the minimum l.

Input

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

Output

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

Examples

standard input	standard output
2 4 2	3
6 13 1	4
1 4 3	-1

Note

Array does not have any repeated occurence of any number.