

Problem: Prime Count in a Segment

You are given two integers L and R. Count how many prime numbers lie in the inclusive interval [L,R].

Input

A single line containing two integers L and R.

Output

Print a single integer: the number of primes p with $L \leq p \leq R$.

Constraints

$1 \leq L \leq R \leq 1e9$

$0 \leq R-L \leq 1e6$

Time limit: 1 second

Memory limit: 256 megabytes

Note: 1 is not a prime.

Examples

Input

1 10

Output

4

Explantion : 2,3,5,7 are only prime numbers between 1 and 10.

Input

99991 100100

Output

8

Input

10000000 1000000000

Output

50182955