



## Problem G. Prime gap

Source file name: G.c, G.cpp, G.java, G.py  
Input: Standard  
Output: Standard

A prime gap is the difference between two successive prime numbers. The  $n$ -th prime gap, denoted  $g(n)$  is the difference between the  $(n + 1)$ -th and the  $n$ -th prime numbers, i.e.

$$g(n) = p_{n+1} - p_n$$

For the first five prime numbers ( 2,3,5,7,11 ) We have  $g(1) = 1$ ,  $g(2) = 2$  and  $g(4) = 4$  the sequence of prime gaps has been extensively studied.

The first 30 prime gaps are :

1, 2, 2, 4, 2, 4, 2, 4, 6, 2, 6, 4, 2, 4, 6, 6, 2, 6, 4, 2, 6, 4, 6, 8, 4, 2, 4, 2, 4, 14

In this problem your task is to provide the maximum prime gap between two arbitrary numbers  $a$  and  $b$ .

### Input

The input consist in several cases no more than 100, each case consist of two positive integers  $a$  and  $b$ , The cases will end with a line with the integers 0 0.

- $1 \leq a, b \leq 1300000$

### Output

For each case you must print the maximum prime gap inside the range defined by the two positive integers inclusive, or NULL if such gap does not exist.

### Example

Input	Output
1 1	NULL
6 12	4
1 30	6
0 0	