

Collatz conjecture

Time limit: 2 sec.

Memory limit: 512MB

Description

The Collatz conjecture is a conjecture in mathematics named after Lothar Collatz, who first proposed it in 1937. The conjecture is also known as the $3n + 1$ conjecture.

The conjecture can be summarized as follows. Take any positive integer n . If n is even, divide it by 2 to get $n / 2$. If n is odd, multiply it by 3 and add 1 to obtain $3n + 1$. Repeat the process indefinitely. The conjecture is that no matter what number you start with, you will always eventually reach 1.

If $n=22$, this process results in the following sequence:

22 11 34 17 52 26 13 40 20 10 5 16 8 4 2 1

The number of elements in this sequence is called the number's **stopping time**. In the example's case, since the sequence has 16 elements, it can be said that the stopping time of 22 is 16.

Your task is to find the number between two given integers (a , b) with the largest stopping time.

Input

The first line contains two integers, a and b . ($1 \leq a \leq b \leq 1000$)

Output

Out of all the stopping times of an integer in the interval $[a, b]$ (inclusive), print the largest one.

Sample I/O

Input(s)	Output(s)
1 10	20
201 210	89