

ICPC Southeast USA Regional Contest

From A to B

Time limit: 1 second

You are given two integers, a and b . You want to transform a into b by performing a sequence of operations. You can only perform the following operations:

- Divide a by two (but only if a is even)
- Add one to a

What is the minimum number of operations you need to transform a into b ?

Input

The single line of input contains two space-separated integers a and b ($1 \leq a, b \leq 10^9$)

Output

Output a single integer, which is the minimum number of the given operations needed to transform a into b .

Sample Input	Sample Output
103 27	4
3 8	5