

## Low-cost Transformation

You are given two integers,  $A$  and  $B$ . You want to transform  $A$  to  $B$  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 input will be a single line containing two integers  $A$  and  $B$  with  $1 \leq A, B \leq 10^9$ .

### Output

On a single line write the minimum number of operations required as an integer.

### Examples

input	output
103 27	4
3 8	5