

## C. XOR Equation

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

Two **positive** integers  $a$  and  $b$  have a sum of  $s$  and a bitwise XOR of  $x$ . How many possible values are there for the ordered pair  $(a, b)$ ?

### Input

The first line of the input contains two integers  $s$  and  $x$  ( $2 \leq s \leq 10^{12}$ ,  $0 \leq x \leq 10^{12}$ ), the sum and bitwise xor of the pair of positive integers, respectively.

### Output

Print a single integer, the number of solutions to the given conditions. If no solutions exist, print 0.

### Examples

input
9 5
output
4

input
3 3
output
2

input
5 2
output
0

### Note

In the first sample, we have the following solutions:  $(2, 7)$ ,  $(3, 6)$ ,  $(6, 3)$ ,  $(7, 2)$ .

In the second sample, the only solutions are  $(1, 2)$  and  $(2, 1)$ .