A. 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	Copy
9 5	
output	Copy
4	

input	Copy
3 3	
output	Copy
2	

input	Copy
5 2	
output	Copy
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 $(2, 1)$.