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)?

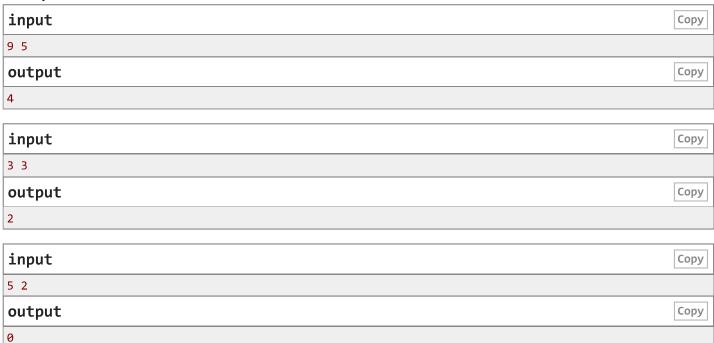
Input

The first line of the input contains two integers s and x ($2 \le s \le 10^{12}$, $0 \le x \le 10^{12}$), 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



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).