

## I. Fours and Sixers

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

CPL 2023 has ended with a great shout-out from its audience. After analyzing all the matches, the CPL committee came up with two crazy equations. They are:

1.  $x = a \wedge b$
2.  $y = a | b$

where,

- $x$  - Total number of catches a batsman makes while fielding in the tournament.
- $\wedge$  - Bitwise XOR operator.
- $y$  - Total number of "man of the match" awards he won in the tournament.
- $|$  - Bitwise OR operator.

Also, the committee informed that, for a given  $x, y$  of a player, the **maximum value** of ' $a$ ' which satisfies the above equation, and the corresponding value of ' $b$ ' is the total number of fours and sixers hit by the batsman in the tournament respectively.

Find the batsman's total number of fours and sixers in the tournament (If they exist) using the given inputs  $x$  and  $y$ .

### Input

The first line consists of a single integer  $t (1 \leq t \leq 10^3)$  - the number of test cases.

For each test case two positive integers  $x, y (0 \leq x, y \leq 10^9)$  is given.

### Output

For each test case print the **maximum** value of ' $a$ ' and the corresponding value of ' $b$ ' respectively. Print -1 if they don't exist.

### Example

input	Copy
3 5 4 8 14 10 1	
output	Copy
-1 14 6 -1	

### Note

In the first test case, no value of ' $a$ ' and ' $b$ ' exists, which satisfies the given equations.

In the second test case, the possible value of ' $a$ ' and ' $b$ ' are (14, 6) and (6, 14). Clearly from this the maximum value of ' $a$ ' is 14 and corresponding value of ' $b$ ' is 6.

And similar to the first test case, in the third test case, no value of ' $a$ ' and ' $b$ ' exists.

### Shaastra Programming Contest Prelims

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Contestant



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