

Problem J. Joy and misery

Source file name: J.c, J.cpp, J.java, J.py2, J.py3
Input: Standard
Output: Standard
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In a land far far away pirates say that being in union will bring joy, that's why pirates usually come in pairs and have put an attribute of good luck to even numbers. In the other hand, bad luck is represented by odd numbers that will bring misery as they represent for them pairs that have been divided.

That is why every time a pirate sees an even number he will feel joy, and every time he sees an odd number he will feel misery. John the most young pirate in the dark ship is having trouble to sleep so the other pirates have suggested him to start counting sheep at night. Oh! how unfortunate is John, as when he is counting the sheep he feels joy and misery all night until he falls asleep.

Can you count how many times will John feel joy and how many times he will feel misery if he starts counting the sheep at the number X and falls asleep when he reaches the sheep with the number Y

Input

The first line of input has a single number T , the number of test cases. Each test case will consist of a single line with two numbers separated by space X and Y .

- $1 \leq T \leq 1000$
- $1 \leq X \leq Y \leq 10^6$

Output

For each test case you should print two numbers separated by a space, the first of them being the number of times John will feel joy while counting sheep, the second number is the number of times John will feel misery while counting sheep.

Example

Input	Output
4	0 1
1 1	2 2
1 4	3 4
5 11	4 3
6 12	