

Sums



SEASON 10 - SIXTH ROUND

You are given the following sequence a , consisting of 10^9 elements:

- $a_1 = -1$
- $a_2 = 2$
- $a_3 = -3$
- $a_4 = 4$
- $a_5 = -5$
- And so on ...

That is, the value of the i -th element of the sequence is calculated using the formula $a_i = i \cdot (-1)^i$

You have to answer q queries of the following type: given two integers l and r , evaluate the sum of all elements of the sequence with indices from l to r inclusive.

Input (sums.in)

The first line of the input file contains the number q . Each of the next q lines contains two integers l and r .

Output (sums.out)

For each query print the sum of the elements with indices from l to r inclusive.

Constraints

$$1 \leq q \leq 500\,000$$

$$1 \leq l, r \leq 1\,000\,000\,000$$

Example

Input	Output
5	-2
1 3	-2
2 5	-5
5 5	4
4 4	-1
2 3	