Problem H. Beautiful Pairs

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	512 mebibytes

Little Vitechka loves number theory very much. He considers a pair of positive integer numbers (a, b) beatiful if $a^2 - 1$ is divisible by b and $b^2 - 1$ is divisible by a. Help Vitechka to count the number of beautiful pairs in which every integer belongs to segment from l to r.

Input

The first line contains n, the number of test cases ($1 \le n \le 10^5$). Each of the next n lines contains a description of one test case which consists of two integer numbers l and r ($1 \le l \le r \le 10^{18}$).

Output

For each test, print the answer on a separate line.

Example

standard input	standard output
2 1 6 10 20	19 20