

Thinking Rational

Time Limit – 1.5 seconds

In mathematics, a rational number is any number that can be expressed as the quotient or fraction P/Q of two integers, with the denominator Q not equal to zero. Since Q may be equal to 1, every integer is a rational number. A rational number can have many representatives.

In this problem, you are given a rational number in the form of P/Q and two other numbers, A and B . You have to find how many representatives of P/Q are there where for some

$$X/Y = P/Q$$

where, $-A < X < +A$ and $-B < Y < +B$

Input :

Input starts with an integer T (≤ 1000), denoting the number of test cases.

Each case contains a line of four integers P, Q, A, B .

Both P and Q are integer numbers ($-10^8 \leq P, Q \leq 10^8$ and $P \neq 0$ and $Q \neq 0$) and both A and B are positive integers ($1 \leq A, B \leq 10^8$)

Output:

For each case, print the case number and the expected answer. See the sample I/O format.

Sample Input	Sample Output
4	Case 1: 2
1 2 3 4	Case 2: 0
4 3 2 1	Case 3: 6
4 4 4 4	Case 4: 4
6 3 6 3	