

## Problem A. Additive Class

Input file:            additive-class.in  
Output file:           additive-class.out  
Time limit:            2 seconds  
Memory limit:         256 mebibytes

In this problem, you have to find how many elements of the additive class of  $a$  and  $b$  belong to  $[l, r]$ .

An *additive class* of positive integers  $a$  and  $b$  is the set of numbers representable as a sum of zero or more numbers each of which is either  $a$  or  $b$ . Formally, it is the following set:  $\{x \cdot a + y \cdot b \mid x, y \in \mathbb{Z}, x, y \geq 0\}$ .

Given  $a$ ,  $b$  and two integers  $l$  and  $r$  ( $l \leq r$ ), find how many elements  $e$  of the additive class of  $a$  and  $b$  satisfy the double inequality  $l \leq e \leq r$ .

### Input

The input consists of one or more test cases. The first line of input contains an integer  $t$ , the number of test cases ( $1 \leq t \leq 10\,000$ ). Then follow the test cases themselves.

Each test case is given on two lines. The first of these lines contains two positive integers  $a$  and  $b$  ( $1 \leq a, b \leq 10^9$ ). The second line contains two integers  $l$  and  $r$  ( $0 \leq l \leq r \leq 10^{18}$ ).

### Output

For each test case, print the answer on a separate line. The answer for a test case is one integer: the number of elements of the additive class of  $a$  and  $b$  which belong to  $[l, r]$ .

### Example

| additive-class.in | additive-class.out |
|-------------------|--------------------|
| 2                 | 2                  |
| 3 5               | 0                  |
| 6 8               |                    |
| 6 4               |                    |
| 13 13             |                    |

### Explanation

The example consists of two test cases.

In the first test case,  $a = 3$  and  $b = 5$ . The additive class of these numbers contains the numbers  $0, 3, 5, 6 = 3 + 3, 8 = 3 + 5, 9 = 3 + 3 + 3, \dots$ . Two of them belong to the segment  $[6, 8]$ .

In the second test case,  $a = 6$  and  $b = 4$ . Obviously, their additive class contains only even numbers, so no element belongs to the segment  $[13, 13]$ .