Problem H. H

Time limit 2000 ms
Mem limit 524288 kB

Leo has developed a new programming language C+=. In C+=, integer variables can only be changed with a "+=" operation that adds the right-hand side value to the left-hand side variable. For example, performing "`a += b`" when `a = 2`, `b = 3` changes the value of `a` to 5 (the value of `b` does not change).

In a prototype program Leo has two integer variables `a` and `b`, initialized with some positive values. He can perform any number of operations "`a += b`" or "`b += a`". Leo wants to test handling large integers, so he wants to make the value of either `a` or `b` **strictly greater** than a given value n. What is the smallest number of operations he has to perform?

Input

The first line contains a single integer T ($1 \le T \le 100$) — the number of test cases.

Each of the following T lines describes a single test case, and contains three integers a, b, n ($1 \le a, b \le n \le 10^9$) — initial values of `a` and `b`, and the value one of the variables has to exceed, respectively.

Output

For each test case print a single integer — the smallest number of operations needed. Separate answers with line breaks.

Examples

Input	Output
2 1 2 3 5 4 100	2 7

Note

In the first case we cannot make a variable exceed 3 in one operation. One way of achieving this in two operations is to perform "`b += a`" twice.