

A. C+=

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

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 ($1 \leq T \leq 100$) — the number of test cases.

Each of the following T lines describes a single test case, and contains three integers a, b, n ($1 \leq a, b \leq n \leq 10^9$) — 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.

Example

input
2 1 2 3 5 4 100
output
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.