## Pouring water

Given two vessels, one of which can accommodate a litres of water and the other - b litres of water, determine the number of steps required to obtain exactly $c$ litres of water in one of the vessels.

At the beginning both vessels are empty. The following operations are counted as 'steps':

- emptying a vessel,
- filling a vessel,
- pouring water from one vessel to the other, without spilling, until one of the vessels is either full or empty.


## Input

An integer $t, 1<=t<=100$, denoting the number of testcases, followed by $t$ sets of input data, each consisting of three positive integers $a, b, c$, not larger than 40000, given in separate lines.

## Output

For each set of input data, output the minimum number of steps required to obtain c litres, or -1 if this is impossible.

## Example

Sample input:
2
5
2
3
2
3
4
Sample output:
2
-1

