

Bucket Fill

You have 3 buckets with capacities C_1, C_2, C_3 . The following operations are allowed, and each take one turn:

1. Use the faucet to fill bucket i so that it holds C_i units of water.
2. Dump the entire contents of bucket i into the sink leaving it with 0 units of water.
3. Pour water from bucket i into bucket j with $j \neq i$. This process completes when either bucket j is full, or bucket i is empty (whichever occurs first).

Given the capacities C_1, C_2, C_3 , the initial amounts of water in each bucket, w_1, w_2, w_3 , and the required amount, M , you must compute the smallest number of turns needed to make at least one bucket have the required amount M .

Input

The first line contains the number T ($1 \leq T \leq 100$) giving the number of test cases. Each test case will be on a single line containing 7 space-delimited integers. The integers satisfy $1 \leq C_i \leq 100$, $0 \leq w_i \leq 100$, and $0 \leq M \leq 100$. The integers will be ordered as:

$$C_1 \ C_2 \ C_3 \ w_1 \ w_2 \ w_3 \ M.$$

Output

For each test case, output a line with a single number, the smallest required number of turns. If it is impossible, output -1 .

Sample Input/Output

Input	Output
10	0
10 10 10 5 0 0 5	-1
10 10 10 0 0 0 5	7
10 9 8 0 0 0 5	1
10 9 8 7 6 5 4	43
100 99 98 0 0 0 77	102
100 100 99 5 99 32 73	65
100 23 77 0 0 0 59	3
75 92 32 1 23 14 41	35
97 34 55 0 0 0 33	3
23 3 42 10 2 14 4	