Ambalează, ambalează

Input file:	`standard input`
Output file:	`standard output`
Time limit:	0.3 seconds
Memory limit:	1024 megabytes

Rrr bd bd. Move faster, rrr bd bd

Memețel, Mr. Juve, Susanu - "Ambalează, ambalează"

Mr. Juve, Memetel and Susanu have stumbled upon a curious matrix which has customizable width and infinite height.They also have three numbers, x, y, k , representing the number of views of their three favourite songs. As they are curious people, they started wondering:

In how many ways can we modify the width of this matrix a, such that, if the width is n, and $a_{i,j} = (i-1) \cdot n + j$, the Manhattan distance between cells numbered x and y is exactly k?

We remind you that the Manhattan distance between two points (x, y) and (a, b) is equal to $|x-a|+|y-b|$.

Input

The first line of the input consists of a single integer $t, (1 \leq t \leq 10^4)$ — the number of test cases.

The next t lines each contain 3 numbers , x, y, k, $(1 \leq x, y, k \leq 10^{10})$.

It is guaranteed that the sum of x, y, z over all test cases does not exceed 10^{10}.

Output

For each test case, print a single number, the number of ways the width of the matrix can be changed such that the condition holds. If the number is not finite, print -1.

Examples

standard input	standard output
4 1 7 8 8 6 5 4 1 7 5 6 7	0 1 0 0
4 4 1 3 9 2 4 9 4 3 2 10 2	-1 0 2 3