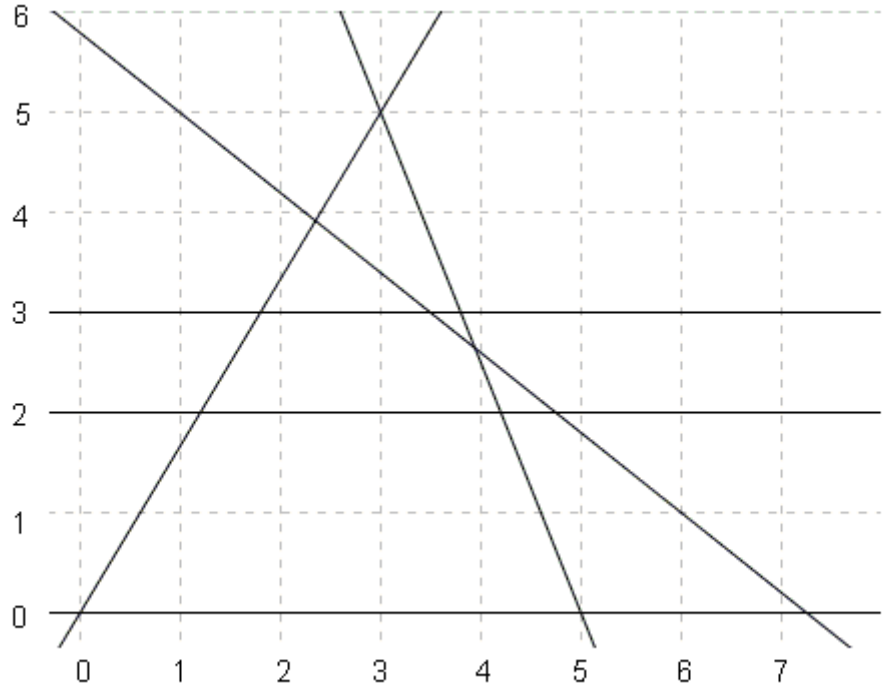
You are given **N** lines, their equations being $\mathbf{A}_i x + \mathbf{B}_i y + \mathbf{C}_i = 0$ in the coordinate plane. Calculate the number of triangles whose sides lie on the given lines. Since the result can be very large, output the number modulo 1 000 000 007.



A possible position of lines.

Important note: No three lines will intersect at the same point.

INPUT

The first line of input contains the integer **N** ($1 \leq \mathbf{N} \leq 300\,000$), the number of lines.
Each of the following **N** lines contains three integers: $\mathbf{A}_i$, $\mathbf{B}_i$ and $\mathbf{C}_i$, the numbers defining the $\mathbf{i}^{th}$ line.
All numbers will be lesser than 10^9.

OUTPUT

The first and only line of output must consist of the required number from the task.

SCORING

In test cases worth 40% of total points, **N** will be lesser than 1000.

SAMPLE TESTS

input	input
6 0 1 0 -5 3 0 -5 -2 25 0 1 -3 0 1 -2 -4 -5 29	5 -5 3 0 -5 -3 -30 0 1 0 3 7 35 1 -2 -1
output	**output**
10	10

Clarification of the first example: The example corresponds to the image in the task.