Problem F
INDEPENDENT LINE
Time limit: 3 seconds

Given a set A consisting of n points on a plane, where the $i-th$ point has coordinates (x_i, y_i). Draw $(n(n-1))/2$ segments between all pairs of points. A line is called independent with respect to (w.r.t) the set A if it does not intersect any of these segments at any point.

Task: Given m lines, determine how many of them are independent w.r.t the set A. The lines are provided in the form of three parameters (a, b, c) representing the equation $ax + by + c = 0$.

Input

The first line contains a positive integer T ($T \leq 15$), the number of test cases. Each test case is given with the following structure:

- The first line contains a positive integer n ($1 \leq n \leq 10^5$).
- The next n lines, where the i-th ($1 \leq i \leq n$) line contains two integers $(x_i, y_i)(|x_i|, |y_i| \leq 10^8)$ specifying the coordinates of the i-th point.
- The next line contains a positive integer m ($1 \leq m \leq 10^5$).
- The last m lines, where the i-th ($1 \leq i \leq m$) line contains three integers $a_i, b_i, c_i(|a_i|, |b_i|, |c_i| \leq 10^8)$ representing the equation of the i-th line.

Output

The output consists of T lines. The i-th line contains a single integer, which is the number of lines that are independent w.r.t the set A corresponding to the i-th test case.

Sample Input	Sample Output
1 3 0 1 1 0 -1 0 4 1 -1 0 1 0 3 0 1 0 1 0 -1	1

Explaination: Only the second line $(x + 3 = 0)$ satisfies the conditions to be considered independent *w.r.t* the set A.