Horizontally Visible Segments

There is a number of disjoint vertical line segments in the plane. We say that two segments are horizontally visible if they can be connected by a horizontal line segment that does not have any common points with other vertical segments. Three different vertical segments are said to form a triangle of segments if each two of them are horizontally visible. How many triangles can be found in a given set of vertical segments?

Task

Write a program that:

- reads the description of a set of vertical segments,
- computes the number of triangles in this set,
- writes the result.

Input

The first line of the input contains exactly one positive integer d equal to the number of data sets, $1 <= d <= 20$. The data sets follow.

The first line of each data set contains exactly one integer n, $1 <= n <= 8000$, equal to the number of vertical line segments.

Each of the following n lines consists of exactly 3 nonnegative integers separated by single spaces: y'_i, y''_i, x_i (that is the y-coordinate of the beginning of a segment, y-coordinate of its end and its x-coordinate, respectively). The coordinates satisfy: $0 <= y'_i < y''_i <= 8000$, $0 <= x_i <= 8000$. The segments are disjoint.

Output

The output should consist of exactly d lines, one line for each data set. Line i should contain exactly one integer equal to the number of triangles in the i-th data set.

Example

Sample input:
```
1
5
0 4 4
0 3 1
3 4 2
0 2 2
0 2 3
```

Sample output:
```
1
```