

# 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,  $1 \leq d \leq 20$ . The data sets follow.

The first line of each data set contains exactly one integer  $n$ ,  $1 \leq n \leq 8000$ , 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:  $0 \leq y'_i < y''_i \leq 8000$ ,  $0 \leq x_i \leq 8000$ . 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
```