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# 1. Boxes

**Program Name: Boxes.java**

**Input File: boxes.dat**

A popular Russian item is a set of nesting dolls, also known as Matryoshka dolls. These are a series of dolls that fit one inside each other, from smallest to biggest. As you are packing to move into your college dorm, you wish to apply this concept to fit a number of cardboard boxes into each other to make them easier to carry.

Given a series of box dimensions, write a program to determine how many boxes are able to fit inside each other, taking each box and placing it (after possibly rotating it) inside the next one.

## Input

- The first line will contain a single integer  $n$  that indicates the number of data sets to follow.
- Each data set will consist of:
  - A line containing an integer  $b$  that indicates the number of boxes,  $2 \leq b \leq 10$ .
  - A line containing a space-separated list of  $b$  box dimensions in the format " $L \times W \times H$ ", where  $L$  represents the length of the box in feet,  $W$  represents the width of the box in feet, and  $H$  represents the height of the box in feet,  $1 \leq L, W, H \leq 20$ . Note that although these are the given dimensions, a box can be rotated such that its dimensions change (e.g., a  $1 \times 2 \times 3$  box can be rotated to be a  $1 \times 3 \times 2$ ,  $2 \times 1 \times 3$ ,  $2 \times 3 \times 1$ ,  $3 \times 2 \times 1$ , or  $3 \times 1 \times 2$  box).

## Output

For each data set in the input, output a single line " $X$ ", where  $X$  is the number of boxes that are able to fit into its next box in the given sequence of boxes, stopping once a box does not fit into the next box in the sequence. In order to fit, each of the box's dimensions must be strictly smaller than the dimensions of the box it is placed in.

## Example Input File

```
4
2
1x2x3 2x3x4
2
3x1x2 2x3x4
2
1x2x3 2x3x3
3
1x2x3 2x3x4 3x4x4
```

## Example Output to Screen

```
1
1
0
1
```