

Packing Boxes

You just got a job with Amazon! Unfortunately, on your first day of work, you discover that you were hired to pack boxes in one of their warehouses instead of programming their cloud computing engine like you had hoped.

You decide that any job is better than no job, so you set to work. You take your place next to a conveyor belt, where items that customers have purchased travel down the line to you. Your job is to pack each item in a box, then hand it off to someone else to label it and send it to UPS for delivery.

The items that you pack come in all sizes, and you are required to pack each one in the smallest box that it will fit in. You are given a list of box sizes (length, width, and height in inches), and a list of items to pack (again, you are given the length, width, and height for each).

For each item, you must find the smallest box that is big enough to fit the item. You can rotate the item to make it fit, but only at right angles, i.e., you may not stuff an item diagonally into a box.

The list of box sizes is not given in any particular order. You must order them from smallest to largest yourself according to total surface area.

Note: The ¶ symbol in the examples below represents a new-line character.

Input

The input is given in the format outlined below.

```
numberOfBoxSizes¶
length width height¶
length width height¶
etc...
numberOfItems¶
length width height¶
length width height¶
etc...
```

Output

The output should be one line per item. Each line should give the size of the item followed by the size of the box you will pack it in. Each size should be given exactly as it was provided in the input.

Sample Input

```
3¶
5 7 2.5¶
9 12 3¶
11.5 17.5 4¶
5¶
6 6 2.3¶
```

7 1 4.3¶
3.2 10.3 8.6¶
1 1.1 1¶
2.5 7 5¶

Sample Output

6 6 2.3 9 12 3¶
7 1 4.3 5 7 2.5¶
3.2 10.3 8.6 11.5 17.5 4¶
1 1.1 1 5 7 2.5¶
2.5 7 5 5 7 2.5¶