

Empty Cuboids

We call a cuboid **regular** if:

- one of its vertices is a point with coordinates $(0,0,0)$,
- edges beginning in this vertex lie on the positive semi-axes of the coordinate system,
- the edges are not longer than 10^6

There is given a set **A** of points of space, whose coordinates are integers from the interval $[1..10^6]$. We try to find a regular cuboid of maximal volume which does not contain any of the points from the set **A**. A point belongs to the cuboid if it belongs to the interior of the cuboid, i.e. it is a point of the cuboid, but not of its wall.

Task

Write a program which:

- reads from the standard input the coordinates of points from the set **A**,
- finds one of the regular cuboids of maximal volume which does not contain any points from the set **A**,
- writes the result to standard output.

Input

Input begins with a line containing integer $t \leq 10$, the number of test cases. t test cases follow.

In the first line of each test case one non-negative integer n is written ($n \leq 5000$). It is the number of elements in the set **A**. In the following n lines of the input there are triples of integers from the interval $[1..10^6]$, which are the X, Y and Z coordinates of points from **A**, respectively. Numbers in each line are separated by single spaces.

Output

For each test case there should be three integers separated by single spaces. These are the X, Y and Z coordinates (respectively) of the vertex of the regular cuboid of maximal volume. If there is more than one such a cuboid, choose whichever. We require that all coordinates be positive.

Example

Sample input:

```
1
4
3 3 300000
2 200000 5
90000 3 2000
2 2 1000
```

Sample output:

```
1000000 200000 1000
```