PACKS

Introduction

The employees of the biggest in this part of Universum beetlejumper munitions factory "BitBullet" never complain about lack of work – there can always be found a kind of war, where soldiers need to be equipped with bullets to all kinds of weapons. Despite this, there are moments in which even this perfectly-managed institution has problems with the performance of all contracts on time. This is the case just now, when in the neighbouring planetary system beetlejumpers were attacked by a tribe of ruthless dragonflies. One need to act immediately and provide the bravely defending soldiers with ammunition, which they are running out of. The contract is ready, things should only be all packed into containers waiting in the hangars and sent to the new national heroes, along with the wishes of a quick victory.

Problem

Your task is to pack the ammunition boxes into the containers. Both boxes, as well as the containers are cuboids of the integer side lengths. The size of the container is $A \times B \times C$, and i-th from N boxes has a $a_i \times b_i \times c_i$ size. As each bullet is worth its weight in gold, none of free space in the container can be wasted. For this reason the sum of the volumes of the boxes is equal to the volume of the container.

Input data

Test sets are given in packs*.in files.

Each test set contains T number in the first line, being the number of test cases. In the remaining lines there are descriptions of next containers. The first line of the test case contains three natural numbers A, B, C separated with single whitespaces, denoting the sizes of the container. The second line contains one natural number N, being the number of ammunition boxes to be placed in this container. Each i-th of the following N lines consists of three natural numbers a_i, b_i, c_i, denoting the sizes of the i-th box.

$$1 \leqslant T \leqslant 20$$
$$1 \leqslant A, B, C \leqslant 100$$
$$1 \leqslant N \leqslant 50$$
$$1 \leqslant a_i, b_i, c_i \leqslant 100$$

Output data

The container is divided into $A \cdot B \cdot C$ cubes. Each side of a cube is of the length 1. Extreme, opposed cubes have coordinates $(1, 1, 1)$ and (A, B, C). The position of the box in the container is provided by 6 numbers: $x_1, y_1, z_1, x_2, y_2, z_2$ ($1 \leqslant x_1 < x_2 \leqslant A, 1 \leqslant y_1 < y_2 \leqslant B, 1 \leqslant z_1 < z_2 \leqslant C$) which indicate that the opposite corners of the box are located in the cubes (x_1, y_1, z_1) and (x_2, y_2, z_2). Boxes can be freely rotated.

For each container, list the manner of packing of all ammunition boxes within it so that they fill up its space in full. Therefore, at the output of a single test case there should be N lines, 6 natural numbers separated with single whitespaces in each of them, describing the positions of boxes in an identical order as in the input file. Next test cases should be separated with one empty line. Certainly there is at least one acceptable solution. If there are more possible solutions, then please list one of them.

Example

For a given data set:

```
2
2 3 4
1
3 2 4
5 6 7
3
7 4 6
5 7 1
1 1 7
```

A possible answer could be as follows:

```
1 1 1 2 3 4

2 1 1 5 6 7
1 2 1 1 6 7
1 1 1 1 1 7
```

Score

If the answer for the given set is correct, then the score for the set is 1; otherwise the score is 0.