Problem BOXES: Boxes

The archenemy of the Fantastic Four, Dr. Doom, has devised a new plan to conquer the world. He has designed a box with six compartments one of which contains a hydrogen bomb. He has placed several of these boxes throughout New York City and threatens to detonate each bomb if he does not instantly become the ruler of the world. As villains always do, they leave the heroes a small chance to prevent their plan from being carried out. In this case, the only chance of preventing disaster is to determine in which compartment the bomb is located in each of the boxes. Then the strongest member of the Fantastic Four, The Thing, can smash the right compartments of the boxes and thereby destroy the bomb. If, however, The Thing smashes the wrong compartment of at least one box, the bomb will explode and New York City will be history. So you better try your best to find out in which compartments the bombs are located.

Astonishingly, the sides of each box are parallel to the xy, xz, and yz planes of the coordinate system and the cartesian coordinates of each bomb are known. The connections of the *center point M* to the corners of a box define the six compartments of a box as shown in the figure below. A bomb itself has no volume and can be thought of as a point. The bomb never lies on the border between two compartements.
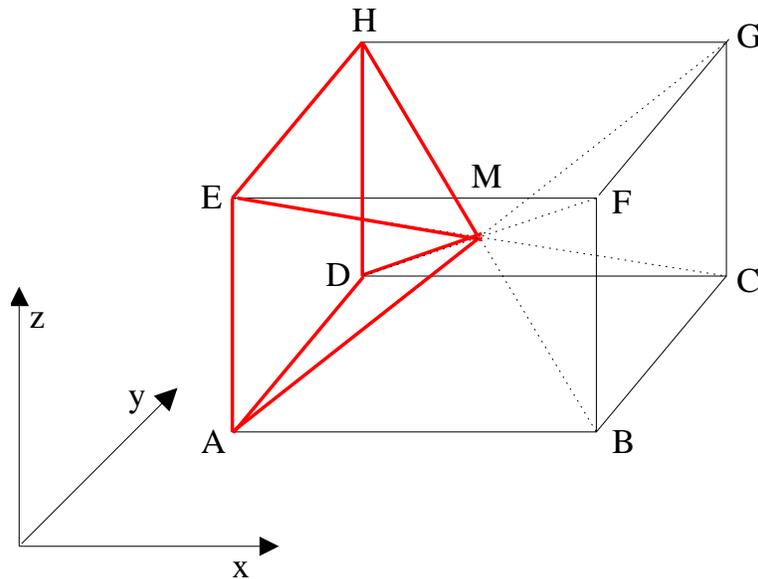

Figure 1: Layout of a box

Input

The first line of input contains the number of boxes The Thing has to smash. Each following line contains 9 numbers. The cartesian coordinates (x_a, y_a, z_a) of the point A of the box, the coordinates (x_g, y_g, z_g) of the point G and the coordinates (x_b, y_b, z_b) of the bomb. It is guaranteed that $x_a < x_g, y_a < y_g$, and $z_a < z_g$. x_a, y_a, z_a may contain negative values, too.

Output

For each box, output the compartment that contains the bomb in a single line. For the compartment defined by the points ABFEM write `front`, for the compartment defined by CDHGM `back`, for the compartment defined by ADHEM `left`, for the compartment defined by BCGFM `right`, for the compartment defined by EFGHM `top`, and for the compartment defined by DCBAM `bottom`.

(Sample Input and Output are provided on the next page)

Sample Input 1

```
6
0.0 0.0 0.0 1.0 1.0 1.0 0.5 0.5 0.6
0.0 0.0 0.0 1.0 1.0 1.0 0.5 0.5 0.4
0.0 0.0 0.0 1.0 1.0 1.0 0.5 0.6 0.5
0.0 0.0 0.0 1.0 1.0 1.0 0.5 0.4 0.5
0.0 0.0 0.0 1.0 1.0 1.0 0.6 0.5 0.5
0.0 0.0 0.0 1.0 1.0 1.0 0.4 0.5 0.5
```

Sample Output 1

```
top
bottom
back
front
right
left
```