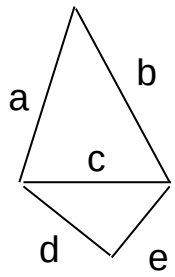
Problem G: Golden Kite

Filename: *golden*
Time limit: *1 second*

The frame of a kite can be formed by using 5 sticks of lengths a, b, c, d and e, arranged as follows:



Given five sticks, the sticks can be arranged in several ways that fit this format. (Namely, one stick is chosen for the shared side, then any two are chosen for the top two sides and the last two are used for the bottom two sides.) Of course, it's possible that some of these arrangements aren't valid because depending on which sticks are chosen for which sides, it's possible that either the top 3 or bottom 3 don't form a valid triangle ***of positive area***. Thus, a kite is only valid if both the top and bottom triangles have positive area.

You have been commissioned to create golden kites, using 5 golden sticks for each frame. The profit that can be earned per kite is proportional to the area of the whole figure, thus, the manufacturer wants you to maximize the area of the design. Write a program to calculate the maximum area that can be obtained for a kite shape as defined above given the lengths of the 5 golden sticks.

The Problem

Given five positive integers which represent the length of the five sticks at your disposal, calculate the maximum area of the kite shape that can be created by using one of the sticks as a shared side between two triangles. It is guaranteed that there will be at least one way to arrange sticks of the given length to form two triangles of positive area.

The Input

The first line of input will contain a single positive integer, $\boldsymbol{n}$ ($\boldsymbol{n} \leq 20$), representing the number of input cases to process. The input cases follow. Each case will appear on a single line containing 5 space separated integers, $\boldsymbol{a}$, $\boldsymbol{b}$, $\boldsymbol{c}$, $\boldsymbol{d}$, and $\boldsymbol{e}$ ($2 \leq \boldsymbol{a}, \boldsymbol{b}, \boldsymbol{c}, \boldsymbol{d}, \boldsymbol{e} \leq 100$), representing the lengths of the 5 sticks for the input case. It is guaranteed that at least one valid kite of positive area (where both triangles have positive area) can be formed with the stick lengths given in each input case.

The Output

For each input case, on a line by itself, output the maximum possible area of a kite that can be formed, rounded to 3 decimal places.

Sample Input

```
2
3 4 5 6 7
12 8 6 9 15
```

Sample Output

```
20.697
77.525
```

Note: For the first test case, an optimal arrangement is a = 7, b = 6, c = 5, d = 4 and e = 3.