Sphere in a tetrahedron

Of course a Sphere Online Judge System is bound to have some tasks about spheres. So here is one. Given the lengths of the edges of a tetrahedron calculate the radius of a sphere inscribed in that tetrahedron (i.e. a sphere tangent to all the faces).

Input

Number N of test cases in a single line. (N <= 30) Each of the next N lines consists of 6 integer numbers -- the lengths of the edges of a tetrahedron separated by single spaces. The edges are not longer than 1000 and for the tetrahedron WXYZ, the order of the edges is: WX, WY, WZ, XY, XZ, YZ.

Output

N lines, each consisting of a real number given with four digits decimal precision equal to the radius of a sphere inscribed in the given tetrahedron.

Example

Input:
2
1 1 1 1 1 1
1000 999 998 5 5 6

Output:
0.2041
1.4189