Problem 5. Easy Geometry Problem

Time Limit : 1 second
Memory Limit : 32 megabytes

Description

Let $ABCD$ is a tetrahedron and $DA = a, DB = b, DC = c,\ \angle BDC = \alpha, \angle ADC = \beta, \angle ADB = \gamma$ are given.

You must calculate the radius of inscribed sphere of $ABCD$.

Input

The first line contains one integer $\boldsymbol{T}$ $(1 \leq \boldsymbol{T} \leq 100000)$ – indicating the number of test cases.

Each test case contains six integer $a, b, c, \alpha, \beta, \gamma$.

$(1 \leq a, b, c \leq 100, 0 < \alpha, \beta, \gamma < 360)$

Output

Print the radius of inscribed sphere.

Please round to 6 digits after the decimal point.

Sample Input

```
1
10 10 10 90 90 90
```

Sample Output

```
2.113249
```