A *triangular square* is a square within a triangle. For example, the following figure shows a triangular square (which is not properly scaled).

Input

First line of input is an integer T (< 10000) which specifies the number of test cases to follow. Then comes T lines each of which contains three space delimited integers (less than 1000) expressing the edges of a valid triangle.

Output

For each triangle, print the maximum area of a possible *triangular square* within it. Print each output in a separate line. Output should be correct up to six decimal places. Follow the sample output below.

Sample Input

```
2
6 6 6
2 2 2
```

Sample Output

```
7.754051
0.861561
```