

# 10991 Region

From the figure on the right, it is clear that C1, C2 and C3 circles are touching each other.

- Consider,
- C1 circle have  $R1$  radius.
- C2 circle have  $R2$  radius.
- C3 circle have  $R3$  radius.

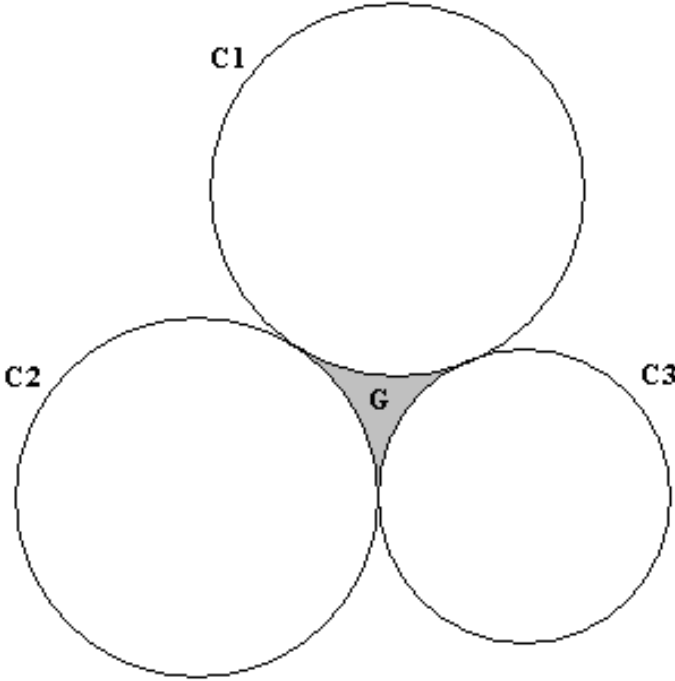
Write a program that will calculate the area of shaded region G

### Input

The first line will contain an integer  $k$  ( $1 \leq k \leq 1000$ ) which is the number of cases to solve. Each of the following  $k$  Lines will contain three floating point number  $R1$  ( $1 \leq R1 \leq 1000$ ),  $R2$  ( $1 \leq R2 \leq 1000$ ) and  $R3$  ( $1 \leq R3 \leq 1000$ ).

### Output

For each line of input, generate one line of output containing the area of G rounded to six decimal digits after the decimal point. Floating-point errors will be ignored by special judge program.



### Sample Input

```
2
5.70 1.00 7.89
478.61 759.84 28.36
```

### Sample Output

```
1.2243
2361.0058
```