You all know by now who are playing the World Cup 2002 Soccer Final. The matches of World Cup are held in beautiful stadiums. You can see some beautiful stadiums below (From Korea, Japan, Italy and Germany)

You know that last two matches of a group are played at the same time to prevent the teams from taking any unfair advantages. But still there remain some other problems:

a) If the last two matches of the same group are played in two different places they might end in two different times, so last few minutes of the match which ends later may become excitement free.

b) Often the team that is certain to go to next round may willfully want to lose a match to avoid a great opponent (like Brazil, Italy, Germany etc). In future world cups, teams may also like to avoid the host nations.

To solve these problems FIFA wants to make stadiums where actually three matches can take place. The structure of the stadium is shown below:
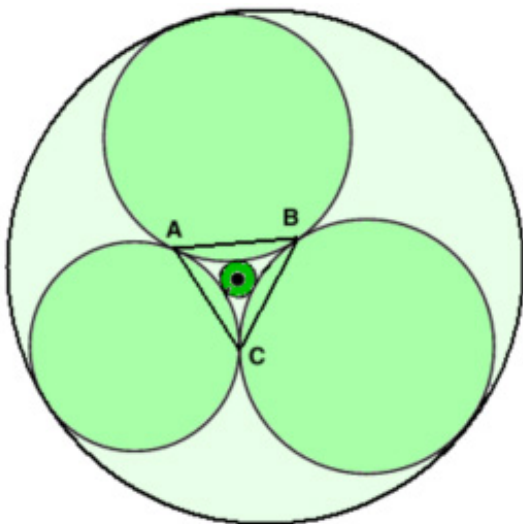
As you can see that there are three small circular stadiums within a large circular stadium. There is also a small scoreboard zone (shown as a small green circle touching the three smaller stadiums) which is also circular. The three smaller stadiums touch one another in point A, B, and C. The triangular zone ABC is known as the neutral zone where the FIFA officials will sit and they will watch all three matches and enjoy the statistics in the scoreboard zone. No one will be allowed to go out of the stadium as the match starts and only the FIFA officials are allowed to carry communication devices. Given the area of the smaller three stadiums ($Ar1$, $Ar2$ and $Ar3$) you will have to find out the radius of the largest stadium (R) or radius of the stadium that contains the smaller three stadiums, radius of the scoreboard zone (Sr) and area of the neutral zone (An)

Input

The input file contains several lines of input. Each line contains three floating point numbers $Ar1$, $Ar2$ and $Ar3$ as described in the problem statement. Input is terminated by end of file.

Output

For each line of input produce one line of output. This line contains three floating point numbers R, Sr and An as explained in the problem statement. All the numbers should have ten digits after the decimal point. Output will be judged with special correction program, so you need not worry about very small precision errors.

Sample Input

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0.3183098862 0.3183098862 0.3183098862
0.3183098862 0.3183098862 0.3183098862
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Sample Output

```
0.6858624831 0.0492427108 0.0438733595
0.6858624831 0.0492427108 0.0438733595
```