

# H - Paint Bombs

**Input:** standard input

**Output:** standard output

Although Russell's cap is simply designed to keep him warm during the cold Philadelphia winters, it sure looks like an aviator's cap to his friends and to his fans. With this in mind, Russell likes to imagine that he is flying above the neighborhood in a biplane, dropping paint bombs on the enemy gangs. Russell has blue paint bombs and yellow paint bombs. Each bomb, when detonated, causes a solid circle of paint of the appropriate color to splatter onto the ground. If the paint circles from a blue paint bomb and a yellow paint bomb intersect, the shared area is colored green. You are to compute the exact area covered by green paint given the specifications of the blue and yellow paint bombs.

## Input

Each input case consists of three unsigned floating-point numbers separated by exactly one space and followed by exactly one <EOLN>. The first number is the radius of the blue circle, the second is the radius of the yellow circle, and the third is the distance between the two circles. All distances are in meters. The last case is followed by 0 0 0<EOLN>. This case is not to be processed; it merely signifies the end of the input data.

## Output

The output cases should appear in the same order as their corresponding input cases. Each output case consists of the following line: **Case c: Green occupies an area of A square meters.** *c* is the number of the case being processed. *A* is the area of green paint, rounded to exactly two decimal places. Each output line is followed by exactly one <EOLN>.

## Sample Input

```
10 10 5<EOLN>
4.3 3.1 2<EOLN>
0 0 0<EOLN>
<EOF>
```

## Sample Output

```
Case 1: Green occupies an area of 215.21 square meters.<EOLN>
Case 2: Green occupies an area of 26.68 square meters.<EOLN>
<EOF>
```