10320   Cow Trouble! Help Please!!

There are many classic problem with cows/goats and grass field in the world of mathematics. One of such problems is shown in the picture (left one) below. A goat is tied at point C which is on the edge of a round field with a rope of length R. One has to determine the length R when the cow can eat 50% grass of the round field.

But in this problem we will consider a slightly different scenario which is shown in the second figure. In a field of infinite area there is a house ABDC. A cow is tied with pillar B of the house with a rope of length R. The length and width of the house is l and w. If the house was not there the cow could eat all the grass in the round green field (The round green field is a circle of radius R). But the presence of the house will certainly reduce his ability as the cow cannot enter the house nor can any part of the rope. You will have to determine the area the cow can now roam around and eat grass.
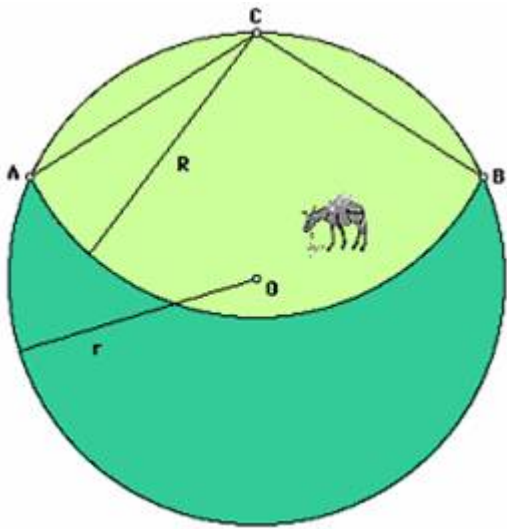

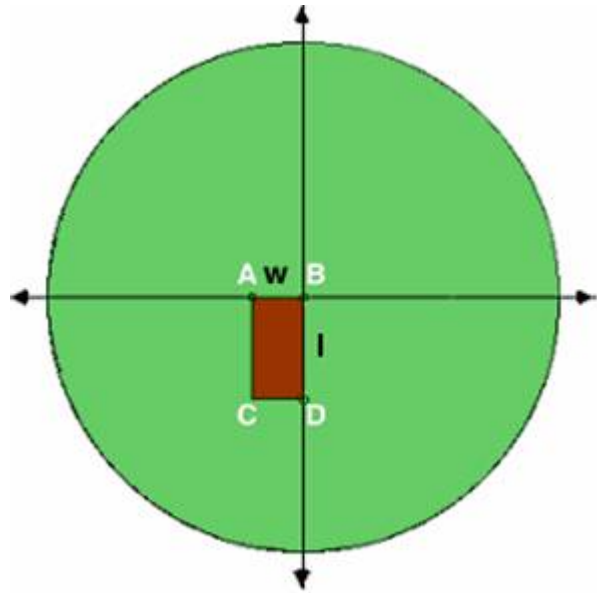Fig 1: A classic Problem with a Goat

Fig 2: The Current Classic Problem with Cow

Input

The input file contains several lines of input. Each line contains three floating point numbers l, w and R as described in the problem statement. All numbers are less than 10000. Input is terminated by end of file.

Output

For each line of input produce one line of output. This output denotes the area that the cow can cover by not entering the house. This value should contain ten digits after the decimal point. Output will be checked with special judge. So you should not worry about very small precision errors.

Sample Input

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10 5 5
10 4 8
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Sample Output

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58.9048622548
163.3628179867
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