Ceiling shower P26757_en

Professor Oak is reforming his flat. He asks for a ceiling shower (consider it a point) in the middle of a 140×90 rectangular space. The start of the water pipe (a straigh line) must be located at a corner of the rectangle. Instead of using the Pythagoras' theorem and cutting a pipe of length $\sqrt{70^2 + 45^2} \simeq 83.22$, the plumber arbitrarily decides to cut a pipe of length 75. Therefore, the shower cannot be placed in the middle of the rectangle, so the goal is to minimize the uglyness of the shower, defined as the Manhattan distance between the shower and the center of the rectangle.

The picture to the right corresponds to the example above. The black line is the ideal pipe of length 83.21..., from $(0, 0)$ to $(70, 45)$. The red line shows the optimal placement with a pipe of length 75, which goes from $(0, 0)$ to $(60, 45)$, with an uglyness of $|60 - 70| + |45 - 45| = 10 + 0 = 10$.

Can you help Prof. Oak to minimize the uglyness? He is so desperate with the reform of his flat that he does not even require the shower to be inside the rectangle.

Input

Input consists of several cases, each one with three strictly positive real numbers h, v and ℓ, corresponding to the dimensions $h \times v$ of the rectangle and the length ℓ of the pipe.

Output

For each case, print the minimum possible uglyness with four digits after the decimal point. To do so, include these two lines at the beginning of your main:

```
cout.setf(ios::fixed);
cout.precision(4);
```

The input cases do not have precision issues.

Sample input 1

```
140 90 75
140 90 83.21
60 80 40
60 80 50
60 80 60
2.718 3.142 23.42
0.8 0.7 0.9
```

Sample output 1

```
10.0000
0.0078
13.4315
0.0000
11.9615
21.8095
0.4292
```

Problem information

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