



(/en/),
v1.1.0

CSD Testing System

(/en/)

Ternary search

Cost: 7 | Solved: 93

Memory limit: 64 MBs

Time limit: 1 s

Input: input.txt

Output: output.txt

Task:

A little boy Fermat lives in a village. The cold times are coming, and the grandma asked the boy to go to the forest to take some firewoods. There's the magical Glade of Firewoods in the forest near the village the boy lives in. The firewoods are infinite there! Of course, Fermat should go there.

But there's a little problem: the glade is a bit far from the village and the boy's speed decreases when he crosses the line between the forest and the field of the village.

You have to find the point where the boy should enter the forest to reach the Glade of Firewoods as fast as possible.

The village is at the point with coordinates $(0,1)$.

The glade is at the point with coordinates $(1,0)$.

The line between the field and the forest is a horizontal line $y = a$, $(0 \leq a \leq 1)$.

The speed on the field equals V_p , the speed in the forest equals V_f . In particular, while crossing the borderline you can choose how to move – on the field or in the forest.

Input:

The first line contains two naturals V_p and V_f ($1 \leq V_p, V_f \leq 10^5$).

The next line contains a real number – the Oy coordinate a of the line between the field and the forest ($0 \leq a \leq 1$).

Output:

The real number with an accuracy of at least 8 characters after the decimal point – the O_x coordinate of the point where the boy should cross the line.

Example:

| Input | Output |
|------------|-------------|
| 5 3 0.4 | 0.783310604 |
| 5 5 0.5 | 0.500000000 |