Problem A: Firewood

Advanced Algorithms for Programming Contests

Restrictions

Time: 2 seconds
Memory: 512 MB

Problem description

Little Jony lives in a small village. Winter is coming, so his grandmother asked him to go to the nearby forest and chop some firewood. In said forest there is a magical clearing where there always lies a bundle of logs ready to take. Obviously, Jony wants to go just there.

The only problem with that is that it's pretty far off from the village and Jony's walking speed in the woods is much lower than on the fields that surround the village and reach right up to the edge of the woods.

- We model the region as the Cartesian plane
- The village is located at $(0, 1)$.
- The clearing is at $(1, 0)$.
- The boundary between the forest and field is the horizontal line $y = a$, where $a \in [0, 1]$ is part of the input.
- Jony's walking speed is v_p on the fields and v_f in the forest. On the boundary he can walk in the forest as well as in the field, however he wishes.

Find the point on the boundary line where Jony should enter the forest (i.e. leave the boundary behind, not walk along it) to reach the magic clearing as quick as possible.

Input

First line contains two positive integers – v_p and v_f ($1 \leq v_p, v_f \leq 10^5$). The second line contains the number $a \in [0, 1]$ described above.

Output

Output a single number – the coordinate on the x-axis of the point where Jony should enter the forest. Your precision should be at least 10^{-6}.

Sample input and output

Input	Output
5 3 0.4	0.783310604
5 5 0.5	0.500000000