South Pacific Competitive Programming Association

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imc

Problem A
Apartment Subletting

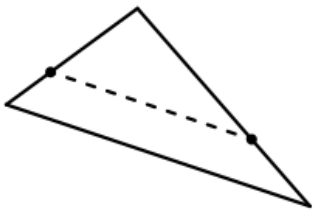
timelimit: 1 second

Aria loves triangles. She loves them so much that she has found herself a completely triangular apartment! Unfortunately, the apartment is rather expensive (and quite a bit larger than she needs), so she is hoping to sublet part of the room for some extra cash. That is, she will split the room into two sections of equal area and rent out one of these sections.

Aria wants to divide her apartment into two rooms of equal area by building a single dividing wall. Of course, one of these rooms must be triangular to keep for herself. Aria has decided that this new wall must be parallel to one of the existing outer walls of the apartment, dividing the space into one triangular room and one trapezoidal room.

Aria has tasked you, the local Home-Space Partition Technician, with finding the minimum length of this dividing wall. Use your geometric prowess to determine this length, in order to minimize Aria's cost of building the wall.

The dashed line above represents a possible dividing wall for the first sample case. Note that this is not necessarily a solution with minimal length.



The Problem: Given the three outer side lengths of Aria's apartment, find the minimal length of a dividing wall that is parallel to an existing side and divides the apartment into two rooms of equal area.

Input

The input will contain three integers, a, b and c ($1 \leq a \leq 10^6$; $1 \leq b \leq 10^6$; $1 \leq c \leq 10^6$), representing the lengths of the outer walls of Aria's apartment. respectively. It is guaranteed that the given side lengths form a triangle with positive area.

Output

Output a single real number: the minimum length of a dividing wall as described above. Your answer will be considered correct if its absolute or relative error does not exceed 10^{-6}.

Sample Input 1	Sample Output 1
3 4 5	2.1213203436

Sample Input 2	Sample Output 2
4500 4500 4500	3181.9805153395

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