

D. Follow Traffic Rules

time limit per test: 1 second

memory limit per test: 64 megabytes

Everybody knows that the capital of Berland is connected to Bercouver (the Olympic capital) by a direct road. To improve the road's traffic capacity, there was placed just one traffic sign, limiting the maximum speed. Traffic signs in Berland are a bit peculiar, because they limit the speed only at that point on the road where they are placed. Right after passing the sign it is allowed to drive at any speed.

It is known that the car of an average Berland citizen has the acceleration (deceleration) speed of a km/h², and has maximum speed of v km/h. The road has the length of l km, and the speed sign, limiting the speed to w km/h, is placed d km ($1 \leq d < l$) away from the capital of Berland. The car has a zero speed at the beginning of the journey. Find the minimum time that an average Berland citizen will need to get from the capital to Bercouver, if he drives at the optimal speed.

The car can enter Bercouver at any speed.

Input

The first line of the input file contains two integer numbers a and v ($1 \leq a, v \leq 10000$). The second line contains three integer numbers l, d and w ($2 \leq l \leq 10000$; $1 \leq d < l$; $1 \leq w \leq 10000$).

Output

Print the answer with at least five digits after the decimal point.

Examples

| | |
|----------------|----------------------|
| input | Copy |
| 1 1 | |
| 2 1 3 | |
| output | Copy |
| 2.500000000000 | |

| | |
|----------------|----------------------|
| input | Copy |
| 5 70 | |
| 200 170 40 | |
| output | Copy |
| 8.965874696353 | |

→ Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Beta Round 5

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

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[Clone Contest](#)

→ Submit?

 Language: [GNU G++23 14.2 \(64 bit, ms\)](#)

 Choose file: [Choose File](#) No file chosen

[Submit](#)

→ Last submissions




| Submission | Time | Verdict |
|---------------------------|-------------------|------------------------|
| 323373720 | Jun/08/2025 13:53 | Accepted |
| 323373323 | Jun/08/2025 13:49 | Wrong answer on test 4 |

→ Problem tags

[implementation](#) [math](#) *2100

No tag edit access

→ **Contest materials**

- Codeforces Beta Round #5 
- Tutorial #1 (en) 
- C, D и E с CBR5 - разбор (ru) 

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