Problem G. Gifts delivery

Input file:	input.txt
Output file:	output.txt
Time limit:	2 seconds
Memory limit:	256 MiB

A trouble has happened at Taja's work: a truck driver got sick, while there's is an urgency to deliver gifts from one store to another. Fortunately, currently she has a break, and this store is situated on the same street so her skill to drive only forward with constant speed v_1 is quite sufficient, to help the situation.

But one of the crossroads on the way to the store has broken traffic lights, and now there is traffic guard, who is not supposed to leave his place.

At some moment he noticed the truck moving towards him and having no intention to steer aside. And he's not supposed to move — he will be penaltized for that — nevertheless he will have to. That's why traffic guard wants to allow the truck bypass in such a way that **he will minimize his time of being off his initial position**. Traffic guard can move in any way, but his speed cannot exceed v_2.

Regard the truck as a rectangle and traffic guard as a dot. It is required that dot should never be strictly inside the rectangle and time, during which the dot isn't at (p, q) (its initial position), should be minimal possible.

Input

First line contains 6 integers a, b, p, q, v_1, v_2 ($1 \le a \le 100$, $0 \le b \le 99$, $-a < p < a$, $b < q \le 100$, $1 \le v_1, v_2 \le 100$). Initially upper left corner of the truck is at $(-a, b)$, lower right corner is at $(a, 0)$. Traffic guard initially stands at the point (p, q). Truck moves towards increasing of the second coordinate with constant speed v_1. Maximal speed of the traffic guard is v_2. If $b = 0$, regard the length of the truck being as small as required.

All distances are measured in meters, speed is measured in meters per second.

It is guaranteed that all the values are such that answer won't exceed 10 000.

Output

Output should contain single real number — the least possible time, when the traffic guard will be absent at (p, q) point. Answer should be given with absolute or relative error that doesn't exceed 10^{-6}.

Examples

input.txt	output.txt
4 0 1 5 1 1	6
3 2 -1 10 5 2	2.306019375

Explanation

In the first sample it would be optimal to wait for 2 seconds, then move for 3 seconds to the right with maximal speed, and then move backwards-left with maximal speed.