

## (A) The Distance between Two Souls

### Description

Mr. Le and Ms. Y haven't been together for months. Happily, they are going on a date this Saturday night. Every time when Mr. Le and Ms. Y see each other at the distance  $L$ , they will start trotting with the speed  $v_1, v_2$  respectively (of course, in the opposite directions). Meanwhile, *Gouzi*, a Welsh Corgi kept by them, will run from one to the other back and forth with a constant speed  $c$  until the lovers hug together. Secretly, they named the distance between their souls as the path length *Gouzi* travelled every time they have a date.

However, Mr. Le is not good at mathematics. He then asks you for help as he wants to remember this meaningful number.

### Input

The input contains several cases and is terminated by end of line. Each test case contains four integers  $L, v_1, v_2$  and  $c$  ( $1 \leq L, v_1, v_2, c \leq 2^{63}-1$ ), indicating the distance.

### Output

For each test case, print the distance *Gouzi* travelled, rounded to 4 decimals.

### Example

Input	Output
125 4 13 1	7.3529
75 1 2 6	150