

## Problem L

### Let's run!

Two runners have been training for an important race in a 188888881-meter track, lets call them runner 1 and runner 2. They both train a lot; however, their performance is different. In the case of runner 1, the more training, the better the results, and their velocity can be expressed as  $v_1 = D_t + E$ . On the other hand, the velocity of runner 2 satisfies the equation  $v_2 = At^2 + Bt + C$ , which means in their training will reach their maximum capacity at some point, after it will go down (consider  $t$  the time they have spent training).

Knowing this, runner 2 decided to challenge runner 1 when the difference between their performance is maximum and, of course, when he is better than runner 1; in this way, he is sure he will win. Nevertheless, in the last minute, runner 1 discovered the crafty intentions of his rival, and although he will not be able to change the end of the race, wants to have a misleading photography where he is ahead of runner 2 for exactly 10 meters.

Then, runner 2 asked their best friend to take the photography at the right moment. Considering the aforementioned and the fact that our runners will take a rest before the race and this will cause their velocity takes the value of the biggest integer less than or equal to  $v_1$  and  $v_2$ , respectively, how many minutes will have to lapse before the photography can be taken for the first time if we want to be sure both runners have run complete minutes, in case it is possible? Note: The race is over when runner 1 says it is over.

### Input

The first line will have a single integer  $T$ ,  $1 \leq T \leq 10^4$ , the number of test cases; then you will receive  $T$  lines, each of them with five real numbers  $A, B, C, D, E$  such that  $1 \leq v_1, v_2 \leq 10^6$ . Also,  $A < 0, B, C, E \geq 0$  and  $D > 0$ .

### Output

For each test case, print the minutes before runner 1 can make their photography. If it is not possible to get the photography, print -1.

| Input example 1                    | Output example 1 |
|------------------------------------|------------------|
| 2                                  | 128350248        |
| -0.0000101 1.010101 0 0.33333 5000 | 59027775         |
| -1 10 15 1 3                       |                  |