

Decipher

Radar scanned the approaching enemy aircraft on the border. However due to some error part of the transmitted data can't be deciphered. It was possible only to obtain the coefficients of the cubic polynomial, whose roots are the coordinates of the aircraft relative to the radar. Now you need to calculate the distance to the aircraft. Write the program to solve this task.

Input

The first line contains T ($1 \leq T \leq 1000$) - number tests. The next T lines contain three integers a , b and c - coefficients of the polynomial $x^3 + ax^2 + bx + c$, whose roots are the coordinates (the absolute value of the coordinates do not exceed 10^8).

Output

For each test print the square of the distance to the enemy aircraft.

Example

Input:

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1  
-6 11 -6
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Output:

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14
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