Experiment 02 - Exercise 05: Quadratic Equation Roots

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Objective

Check whether a quadratic equation has real or imaginary roots and display the roots.

Input

Coefficients `a`, `b`, `c` for $ax^2 + bx + c = 0$.

Output

Roots of the equation, and whether they are real/imaginary.

Approach

- If $a = 0$, it is not a quadratic equation.
- Compute discriminant $D = b^2 - 4ac$.
- If $D > 0$: two real distinct roots.
- If $D = 0$: two real equal roots.
- If $D < 0$: imaginary roots.

Time Complexity

`O(1)`.