

12/12/23

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CLASSMATE

Date _____

Page _____

Q. WAP to find the roots of a quadratic equation.

→ import java.util.*;

class QuadraticEquation

{ public static void main (String args [])

Scanner s = new Scanner (System.in);

double a, b, c;

double D;

double r1, r2;

System.out.printf ("Enter a, b & c: ");

a = s.nextDouble();

b = s.nextDouble();

c = s.nextDouble();

$$D = b * b - 4 * a * c,$$

if ($D \geq 0$)

$$r1 = (-b + \text{Math.sqrt}(D)) / (2 * a);$$

$$r2 = (-b - \text{Math.sqrt}(D)) / (2 * a);$$

System.out.printf ("r1 = %.3f", r1);

System.out.printf ("r2 = %.3f", r2);

{ else

$$r_1 = -b / (2 * a);$$

$$r_2 = \text{Math.abs}(\text{Math.sqrt}(-D) / (2 * a));$$
$$\text{System.out.printf}("r_1 = %.3f + %.3f i/n", r_1, r_2);$$
$$\text{System.out.printf}("r_2 = %.3f - %.3f i/n", r_1, r_2);$$
{ }
}

Output:

Case 1: Enter a, b, & c:

$$r_1 = -1.000 + 1.732i$$

$$r_2 = -1.000 - 1.732i$$

Case 2: Enter a, b & c: 1 3 1

$$r_1 = -0.382$$

$$r_2 = -2.618$$