Task-5-Date-02-27-2024-Day-29.docx

Task 5: Write a Java program to read three positive integers a, b, and c. Find the roots of a quadratic equation for the given a, b, c.

import java.util.Scanner;

public class Threepositiveinteger {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the value of a: ");

        int a = scanner.nextInt();

        System.out.print("Enter the value of b: ");

        int b = scanner.nextInt();

        System.out.print("Enter the value of c: ");

        int c = scanner.nextInt();

        // Validate positive input

        if (a <= 0 || b <= 0 || c <= 0) {

            System.out.println("Error:the entered number must be positive.");

        }

        double discriminant = Math.pow(b, 2) - 4 \* a \* c;

        if (discriminant >= 0) {

            // Two real roots

            double root1 = (-b + Math.sqrt(discriminant)) / (2 \* a);

            double root2 = (-b - Math.sqrt(discriminant)) / (2 \* a);

            System.out.printf("The two real roots are: " + root1 + " and " + root2);

        } else {

            // No real roots

            System.out.println("The equation has no real roots.");

            System.out.println("The discriminant are:" + discriminant);

        }}}

OUTPUT:

Case 1:

Enter the value of a: 12

Enter the value of b: 23

Enter the value of c: 12

The equation has no real roots.

The discriminant are:-47.0

Case 2:

Enter the value of a: -1

Enter the value of b: -34

Enter the value of c: -35

Error:the entered number must be positive.

The two real roots are: -32.93737745050923 and -1.0626225494907722