

Java Week 1 and 2:

Aaryan Prakash

1BM23SC006

Code:

```
import java.util.Scanner;

public class QuadraticEquations{
    public static void main(String[] arg) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a: ");
        double a = scanner.nextDouble();
        System.out.print("Enter b: ");
        double b = scanner.nextDouble();
        System.out.print("Enter c: ");
        double c = scanner.nextDouble();

        double d = b * b - 4 * a * c;

        if (d > 0) {
            double root1 = (-b + Math.sqrt(d)) / (2 * a);
            double root2 = (-b - Math.sqrt(d)) / (2 * a);

            System.out.println("Real Roots");
            System.out.println("Root 1: " + root1);
            System.out.println("Root 2: " + root2);
        }
        else if (d == 0) {
            double root = -b / (2 * a);
```

```
        System.out.println("Roots are real and equal");
        System.out.println("Root: " + root);
    }
    else {
        System.out.println("Roots are complex");
    }

    scanner.close();
}
}
```

Output:

```
D:\1bm23cs006>javac QuadraticEquations.java

D:\1bm23cs006>java QuadraticEquations
Enter a: 12
Enter b: 10
Enter c: 9
aaryan
Roots are complex

D:\1bm23cs006>java QuadraticEquations
Enter a: 2
Enter b: 4
Enter c: 2
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Roots are real and equal
Root: -1.0

D:\1bm23cs006>java QuadraticEquations
Enter a: 2
Enter b: 8
Enter c: 2
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Real Roots
Root 1: -0.2679491924311228
Root 2: -3.732050807568877

D:\1bm23cs006>_
```