

### Lab Program-1

```
import java.util.Scanner;
```

```
class Quadratic {
```

```
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter coefficient a:");
```

```
        double a = sc.nextDouble();
```

```
        if (a == 0) {
```

```
            System.out.println("Not a quadratic equation");
```

```
            return;
```

```
        }
```

```
        System.out.println("Enter coefficient b:");
```

```
        double b = sc.nextDouble();
```

```
        System.out.println("Enter coefficient c:");
```

```
        double c = sc.nextDouble();
```

```
        double discriminant = b * b - 4 * a * c;
```

```
        if (discriminant > 0) {
```

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

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

```
            System.out.println("Roots are real and distinct");
```

```
            System.out.println("Root 1 = " + root1);
```

```
            System.out.println("Root 2 = " + root2);
```

```
        } else if (discriminant == 0) {
```

```
            double root = -b / (2 * a);
```

```
            System.out.println("Roots are real and equal");
```

```
            System.out.println("Root = " + root);
```

```

    } else {

        double realPart = -b / (2 * a);

        double imaginaryPart = Math.sqrt(-discriminant) / (2 * a);

        System.out.println("Roots are imaginary");

        System.out.println("Root 1 = " + realPart + " + " + imaginaryPart + "i");

        System.out.println("Root 2 = " + realPart + " - " + imaginaryPart + "i");

    }

}

}

```

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> javac Quadratic.java
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> java Quadratic
Enter coefficient a:
0
Not a quadratic equation
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> javac Quadratic.java
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> java Quadratic
Enter coefficient a:
1
Enter coefficient b:
-3
Enter coefficient c:
2
Roots are real and distinct
Root 1 = 2.0
Root 2 = 1.0
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> javac Quadratic.java
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> java Quadratic
Enter coefficient a:
1
Enter coefficient b:
2
Enter coefficient c:
1
Roots are real and equal
Root = -1.0
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> javac Quadratic.java
PS C:\Users\Saanvi\OneDrive\Desktop\oops_1BF424CS260> java Quadratic
Enter coefficient a:
1
Enter coefficient b:
2
Enter coefficient c:
5
Roots are imaginary
Root 1 = -1.0 + 2.0i
Root 2 = -1.0 - 2.0i

```

**Build with Agent**

AI responses may be inaccurate.  
[Generate Agent Instructions](#) to onboard AI onto your codebase.

**SUGGESTED ACTIONS**

Build Workspace Show Config

Quadratic.java +

Describe what to build next

Agent Auto

Ln 2, Col 1 Spaces: 4 UTF-8 CRLF {} Java