

9/10/20 Lab 1 program

```
import java.util.*;
public class Quadratic
{
    public static void main (String args [])
    {
        double a, b, c;
        double root1, root2;
        System.out.println ("Enter values");
        Scanner input = new Scanner (System.in);
        a = input.nextDouble();
        b = input.nextDouble();
        c = input.nextDouble();

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

        // condition for real and different roots
        if (determinant > 0)
        {
            root1 = (-b + Math.sqrt (determinant)) / (2*a);
            root2 = (-b - Math.sqrt (determinant)) / (2*a);

            System.out.println ("root1 and root2"
                               + root1 + " " + root2);
        }

        // Condition for real and equal roots
    }
}
```

```

else if (determinant == 0)
{
    root1 = root2 = -b / (2 * a);
    System.out.println("root1 = root2 = " + root1);
}

```

// If roots are not real

else

```

{
    double realPart = -b / (2 * a);
    double imaginaryPart = Math.sqrt
        (-determinant) / (2 * a);

```

```

    System.out.println("There are no real solutions");

```

```

    System.out.println("real part = " + " "
        + realPart + " and imaginary part " + " "
        + " " + imaginaryPart);
}

```