Expt. No. 1 Date 29/09/2020

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LAB-1

Q. WAP that prints all real solutions to the quadratic equations $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula. If D<0 display a message stating that there are no real solutions.

```
import java.util.*;
import java.lang.*;

public class Main
{
    public static void main(String args[])
    {
        Scanner scan = new Scanner(System.in);
        double a = scan.nextDouble();
        double b = scan.nextDouble();
        double c = scan.nextDouble();
        double d = (b*b)-(4*a*c);
        if (d==0)
        {
            double r1 = -b/(2*a);
            double r2 = r1;
            System.out.println(r1);
            System.out.println(r2);
            System.out.println("Roots are real and
                                equal");
        }
```

Teacher's Signature

```
else if (d>0)
{
  double r1 = (-b + Math.sqrt(d))/(2*a);
  double r2 = (-b - Math.sqrt(d))/(2*a);
  System.out.println (r1 + " " +r2);
  System.out.println ("Roots are real and
                       distinct");
}
else
{
  double r1 = -b/(2*a);
  double r2 = (Math.sqrt(-d))/(2*a);
  System.out.println ("Roots are imaginary");
}

}

}
```

Teacher's Signature

#output 1

1 2 1

-1.0
-1.0
Roots are real and equal.

#output 2

1, -5, 6

-2.0
-3.0
Roots are real and distinct

#output 3

1, 1 1

Roots are imaginary.