S.No: 2	Exp. Name: ***Write a Java code to calculate the Roots of a Quadratic equation***	Date:2023-08-31

Aim:

Write code to calculate **roots** of a **quadratic equation**.

Write a class `QuadraticRoots` with `main` method. The method receives three arguments, write code to parse them into `double` type.

For example:

```
if the values 2, 5, 3 are passed as arguments, then the output should be First root
is : -1.0 Second root is : -1.5
If the values 3, 2, 1 are passed then the output should be Roots are imaginary
Similarly, if the values 2, 4, 2 are passed then the output should be Roots are equa
l and value is : -1.0
```

Note: Make sure to use the **print()** and not the **println()** method.

Note: Please don't change the package name.

Source Code:

q10851/QuadraticRoots.java

```
package q10851;
 class QuadraticRoots
 {
      double a,b,c;
      void getData(String c1,String c2,String c3)
      {
         a=Double.valueOf(c1);
         b=Double.valueOf(c2);
         c=Double.valueOf(c3);

      }
      void roots()
      {

      double d;
      if(a==0){
      double root;
      root=-c/b;
      System.out.println("linear equation "+root);
      }
      else
      {
         d=(b*b)-(4*a*c);
         if(d==0){
         double root = -b/(2*a);
         System.out.println("Roots are equal and value is : "+root);
      }
      else if(d>0) {
         double r1,r2;
         r1=(-b+Math.sqrt(d))/(2*a);
         r2=(-b-Math.sqrt(d))/(2*a);
```

```
          System.out.println("First root is : "+r1+" Second root is : "+r2);
       }
       else
        System.out.format("Roots are imaginary");
       }
    }
    public static void main(String a[])
    {
       QuadraticRoots r=new QuadraticRoots();
       r.getData(a[0],a[1],a[2]);
       r.roots();
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
First root is : -0.6047152924789525 Second root is : -1.3952847075210475

Test Case - 2
User Output
Roots are equal and value is : -1.0

Test Case - 3
User Output
Roots are imaginary