S.No: 2	Exp. Name: ***Write a Java code to calculate the Roots of a Quadratic equation***	Date:2023-09-04

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.print("linear equation "+root);
         }
         else{
            d=(b*b)-(4*a*c);
            if(d==0){double root=-b/(2*a);
            System.out.print("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.println("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