```
import java.util.*;
class quad
{
	public static void main(String args[])
	{
		double a, b, c;
		double root1, root2;
		System.out.println("enter 'a' value\n");
		Scanner sc = new Scanner(System.in);
		a = sc.nextDouble();
		System.out.println("enter 'b' value\n");
		b = sc.nextDouble();
		System.out.println("enter 'c' value\n");
		c = sc.nextDouble();

		double determinant = (b*b) - (4*a*c);
		if(determinant > 0)
		{
			root1 = (-b + Math.sqrt(determinant))/(2*a);
			root2 = (-b - Math.sqrt(determinant))/(2*a);
			System.out.format("root 1 = %2f and root 2 =
%2f", root1, root2);
```

```
            }
            else if(determinant == 0)
            {
                root1 = root2 = -b/(2*a);
                System.out.format("root 1 = root 2 = %2f",
root1);
            }
            else
            {
                double real = -b/(2*a);
                double imaginary = Math.sqrt(-
determinant)/(2*a);
                System.out.format("root 1 = %2f + i(%2f)\n",
real, imaginary);
                System.out.format("root 2 = %2f - i(%2f)",
real, imaginary);
            }
        }
}
```

Outputs:

1.

```
C:\Users\Admin\Desktop\1BM21CS238>javac quad.java

C:\Users\Admin\Desktop\1BM21CS238>java quad
enter 'a' value

100
enter 'b' value

89
enter 'c' value

45
root 1 = -0.445000 + i(0.501971)
root 2 = -0.445000 - i(0.501971)
```

2.

```
C:\Users\Admin\Desktop\1BM21CS238>java quad
enter 'a' value

9
enter 'b' value

-45
enter 'c' value

-67
root 1 = 6.200601 and root 2 = -1.200601
```

3.

```
C:\Users\Admin\Desktop\1BM21CS238>java quad
enter 'a' value

1
enter 'b' value

-4
enter 'c' value

4
root 1 = root 2 = 2.000000
C:\Users\Admin\Desktop\1BM21CS238>
```