

## Quadratic:-

```
1) import java.util.*;  
public class Quadratic  
{
```

```
    public static void main (String args[])  
    {
```

```
        double a, b, c, d;
```

```
        Scanner in = new Scanner(System.in);
```

```
        System.out.println("This program finds roots of  
the quadratic equation of the form  
 $ax^2 + bx + c = 0$ ");
```

```
        System.out.println("Enter the values of coefficients  $x^2$ ,  
 $x$  and constant");
```

```
        a = in.nextDouble();
```

```
        b = in.nextDouble();
```

```
        c = in.nextDouble();
```

```
        d = b*b - 4*a*c;
```

```
        b = b/(2*a);
```

```
        if (d > 0)
```

```
        {
```

```
            d = Math.sqrt(d) / (2*a);
```

```
            System.out.println("Roots are ");
```

```
            System.out.println("(-b + d) + " " and " +
```

(-b-d));

}

else if (d == 0)

★2 System.out.println("The roots are equal: "  
+(-b));

else  
{

d = Math.sqrt(-d)/(2\*a);

System.out.println("The roots are imaginary.  
The roots are: " );

System.out.println("(-b) + " + i" + (d) + " and "  
+ (-b) + " - i" + (d) );

}

}

}

Changes in the code:-

★1 :-

System.out.printf("%.4f and %.4f",  
(-b+d), (-b-d));

★2 :-

System.out.printf("The roots are equal:  
%.4f", (-b));