

8. Develop a Java program that prints all real solutions to the quadratic equation  $ax^2 + bx + c = 0$ . Read in  $a, b, c$  and use the quadratic formula. If the discriminant  $b^2 - 4ac$  is negative, display a message stating that there are no real solutions.

```
import java.util.Scanner;
```

```
public class Main {
```

```
    public static void main (String args[]) {  
        double r1, r2;
```

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

```
        System.out.println ("Enter a, b, c value:");
```

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

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

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

```
        double D = b*b - 4*a*c;
```

```
        if (D < 0) {
```

```
            System.out.println ("There are no real solutions");  
        }
```

```
        else {
```

```
            r1 = (-b + Math.sqrt(D))/2*a;
```

```
            r2 = (-b - Math.sqrt(D))/2*a;
```

```
            System.out.println ("real root 1: " + r1);  
            System.out.println ("real root 2: " + r2);  
        }  
    }
```

```
}
```

## OUTPUT :

→ Enter a, b, c value :

1 3 2

real root 1 : -1.0

real root 2 : -2.0

→ Enter a, b, c value

1 1 1

There are no real solutions.