```java
1    import java.util.Scanner;
2    class quad{
3        public static void main(String[] args)
4        {
5            Double a1,b1,c1,ans1,ans2,a2;
6            Scanner sc=new Scanner(System.in);
7            System.out.println("Enter the values of a,b,c for quad eqn in the form of ax^2+bx+c");
8            System.out.println("where 'a' should be non zero");
9            a1=sc.nextDouble();
10           b1=sc.nextDouble();
11           c1=sc.nextDouble();
12           if(a1==0)
13               System.out.println("'a' should be non zero");
14           else
15           {
16               a2=(b1*b1)-(4*a1*c1);
17               if(a2>0){
18
19                   System.out.println("roots are real and unequal");
20                   ans1=(-b1+Math.sqrt(a2))/(2*a1);
21                   ans2=(-b1-Math.sqrt(a2))/(2*a1);
22                   System.out.printf("The solutions of quad eqns are %.4f and %.4f \n",ans1,ans2);
23               }
24               else if(a2==0){
25                   System.out.println("roots are real and equal");
26                   ans1=((-b1+Math.sqrt(a2))/(2*a1));
27                   ans2=((-b1-Math.sqrt(a2))/(2*a1));
28                   System.out.printf("The solutions of quad eqns are %.4f and %.4f \n",ans1,ans2);
29
30               }
31               else
32               {
33                   System.out.println("There are no real roots");
34
35               }
36
37           }
38       }
39   }
```

```
[Arvinds-MacBook-Pro:ooj Arvind$ javac quad.java
[Arvinds-MacBook-Pro:ooj Arvind$ java quad
 Enter the values of a,b,c for quad eqn in the form of ax^2+bx+c
 where 'a' should be non zero
 1
 -3
 -10
 roots are real and unequal
 The solutions of quad eqns are 5,0000 and -2,0000
[Arvinds-MacBook-Pro:ooj Arvind$ java quad
 Enter the values of a,b,c for quad eqn in the form of ax^2+bx+c
 where 'a' should be non zero
 5
 4
 1
 There are no real roots
[Arvinds-MacBook-Pro:ooj Arvind$ java quad
 Enter the values of a,b,c for quad eqn in the form of ax^2+bx+c
 where 'a' should be non zero
 4
 -4
 1
 roots are real and equal
 The solutions of quad eqns are 0,5000 and 0,5000
```