```java
import java.util.Scanner;

public class lab1 {

    public static void main(String[] args)
    {
        double a, b, c, root1, root2;
        double det;

        Scanner sc = new Scanner(System.in);
        System.out.println("enter value of a.");
        a = sc.nextDouble();
        System.out.println("enter the values of a.b");
        a = sc.nextDouble();
        System.out.println("enter the value of c.");
        c = sc.nextDouble();

        det = b*b - 4*a*c;

        if (det > 0)
        {
            root1 = (-b + Math.sqrt(b*b-4*a*c))/(2*a);
            root2 = (-b - Math.sqrt(b*b-4*a*c))/(2*a);
            system.out.println("first roots is"+root1);
            system.out.println("second root is"+root2);
        }

        else if (det == 0)
        {
            root1 = -b/(2*a);
        }

        system.out.println("roots are same and equal."+root1);
    } else if (det < 0)
```

```java
import java.util.Scanner;

class Student
{
    private String USN;
    private String name;
    private int n;
    private double sGPA = 0;
    private int total credits = 0;
    Scanner SS = new Scanner(System.in);

    void details()
    {
        System.out.println("enter USN of the student");
        USN = SS.nextLine();
        System.out.println("enter no of subjects");
        n = SS.nextLn();
        int credits = new int[n];
        double marks = new double[n];
        System.out.println("enter details of the subject");
        for(int i=0; i<n; i++)
        {
            System.out.println("enter credits allotted to the su..
            subject "+(i+1));
            credits[i] = SS.nextInt();
            System.out.println("enter marks in the subject "+(i+1));
            marks[i] = SS.next f[i];
        }
    }
    void calculate(int credit, double marks, int ...)
    {
```

```
total credits = total credits + credit;
if (marks >= 90 && marks <= 100)
    SGPA = SGPA + (10 * credit);
else if (marks >= 80 && marks <= 89)
    SGPA = SGPA + (9 * credit);
else if (marks >= 70 && marks <= 79)
    SGPA = SGPA + (8 * credit);
else if (marks >= 60 && marks <= 69)
    SGPA = SGPA + (7 * credit);
else if (marks >= 50 && marks <= 59)
    SGPA = SGPA + (6 * credit);
else if (marks >= 40 && marks <= 49)
    SGP = SGPA + (5 * credit);
else
    System.out.println("failure in subject");
}
void display()
{
    System.out.println("details of student");
    System.out.print("name:" + name);
    System.out.println("USN:" + USN);
    System.out.println("SGPA of std") + (SGPA / total credits);
```