5. Write a Java program to create a class representing a Circle with attributes radius and methods to calculate area and circumference. Create an object and display the results. [class basics]

```
class Circle {
   private double radius;

                // Constructor to initialize radius
   public Circle(double radius) {
      this.radius = radius;
   }

                // Method to calculate area
   public double calculateArea() {
      return Math.PI * radius * radius;
   }

                // Method to calculate circumference
   public double calculateCircumference() {
      return 2 * Math.PI * radius;
   }
                // Getter for radius
   public double getRadius() {
      return radius;
   }
                // Setter for radius
   public void setRadius(double radius) {
```

```
        this.radius = radius;
    }
}

public class CircleDemo {
    public static void main(String[] args) {
                        // Create a Circle object with radius 5.0
        Circle circle = new Circle(5.0);

                    // Calculate area and circumference
        double area = circle.calculateArea();
        double circumference = circle.calculateCircumference();

                    // Display results
        System.out.println("Circle with radius: " + circle.getRadius());
        System.out.println("Area: " + area);
        System.out.println("Circumference: " + circumference);
    }
}
```

```
C:\Users\HP\Desktop\YenJava>javac CircleDemo.java

C:\Users\HP\Desktop\YenJava>java CircleDemo
Circle with radius: 5.0
Area: 78.53981633974483
Circumference: 31.41592653589793
```

6. Program to create a class DISTANCE with the data members feet and inches. Use a constructor to read the data and a member function Sum ( ) to add two distances by using objects as method arguments and show the result. (Input and output of inches should be less than 12.) [constructors]

```
import java.util.Scanner;
class distance
{
   int feet;
   int inches;
   distance()
   {
      Scanner sc=new Scanner(System.in);
      System.out.println("Enter feet:");
      feet=sc.nextInt();
      System.out.println("Enter inches:");
      inches=sc.nextInt();
   }
   public void showDistance()
   {
      System.out.println("Feet:"+feet+"\tInches:"+inches);
   }
   void sum(distance D1,distance D2)
   {
      inches=D1.inches+D2.inches;
      feet=D1.feet+D2.feet+(inches/12);
      inches=inches%12;
   }
```

```
}

public class labA5
{
   public static void main(String[] s)
   {
      distance D1=new distance();
      distance D2=new distance();
      System.out.println("second distance:");
      D1.showDistance();
      System.out.println("second distance:");
      D2.showDistance();
      D1.sum(D1,D2);
      System.out.println("Total distance is:");
      D1.showDistance();
   }
}
```

```
C:\Users\HP\Desktop\YenJava>javac DistancePrg.java

C:\Users\HP\Desktop\YenJava>java DistancePrg
Enter feet:
7
Enter inches:
9
Enter feet:
8
Enter inches:
8
second distance:
Feet:7  Inches:9
second distance:
Feet:8  Inches:8
Total distance is:
Feet:16 Inches:5
```