Question **1**

Correct

Marked out of 5.00

Create a class called "Circle" with a radius attribute. You can access and modify this attribute using getter and setter methods. Calculate the area and circumference of the circle.

**Area of Circle = $\pi r^2$**

**Circumference = $2\pi r$**

**Input:**

**2**

**Output:**

**Area = 12.57**
**Circumference = 12.57**

**For example:**

| Test | Input | Result |
|---|---|---|
| 1 | 4 | Area = 50.27<br>Circumference = 25.13 |

**Answer:** (penalty regime: 0 %)

Reset answer

```java
import java.util.Scanner;

class Circle {
    private double radius;

    public Circle(double radius) {
        // Set the instance variable 'radius'
        this.radius = radius;
    }

    public void setRadius(double radius) {
        // Set the radius
        this.radius = radius;
    }

    public double getRadius() {
        // Return the radius
        return radius;
    }

    public double calculateArea() {
        // Calculate and return the area of the circle
        return Math.PI * radius * radius;
    }

    public double calculateCircumference() {
        // Calculate and return the circumference of the circle
        return 2 * Math.PI * radius;
    }
}

public class Prog {
    public static void main(String[] args) {
        int r;
        Scanner sc = new Scanner(System.in);
        r = sc.nextInt();
        Circle c = new Circle(r);
        System.out.println("Area = " + String.format("%.2f", c.calculateArea()));
        // Invoke the calculateCircumference method
        System.out.println("Circumference = " + String.format("%.2f", c.calculateCircumference()));
    }
}


```

|  | Test | Input | Expected | Got |  |
|---|---|---|---|---|---|
| ✓ | 1 | 4 | `Area = 50.27`<br>`Circumference = 25.13` | `Area = 50.27`<br>`Circumference = 25.13` | ✓ |
| ✓ | 2 | 6 | `Area = 113.10`<br>`Circumference = 37.70` | `Area = 113.10`<br>`Circumference = 37.70` | ✓ |
| ✓ | 3 | 2 | `Area = 12.57`<br>`Circumference = 12.57` | `Area = 12.57`<br>`Circumference = 12.57` | ✓ |

Passed all tests! ✓

Question **2**

Correct

Marked out of 5.00

Create a Class Mobile  with the attributes listed below,

private String manufacturer;
private String operating_system;
public String color;
private int cost;

Define a Parameterized constructor to initialize the above instance variables.

Define getter and setter methods for the attributes above.

for example : setter method for manufacturer is

void setManufacturer(String manufacturer){

this.manufacturer= manufacturer;

}

String getManufacturer(){

 return manufacturer;}

Display the object details by overriding the toString() method.

**For example:**

| Test | Result |
|---|---|
| 1 | `manufacturer = Redmi`<br>`operating_system = Andriod`<br>`color = Blue`<br>`cost = 34000` |

**Answer:** (penalty regime: 0 %)

```java
import java.util.*;

public class Mobile {
    private String manufacturer;
    private String operating_system;
    public String color;
    public int cost;

    Mobile(String m, String os, String col, int cost) {
        this.manufacturer = m;
        this.operating_system = os;
        this.color = col;
        this.cost = cost;
    }

    public String getM() {
        return manufacturer;
    }

    public String getOS() {
        return operating_system;
    }

    public String getC() {
        return color;
    }

    public int getcost() {
        return cost;
    }

    public String toString() {
        return "manufacturer = " + getM() + '\n' + "operating_system = " + getOS() + '\n' + "color = " + getC() +
    }

    public static void main(String[] args) {
        Mobile r = new Mobile("Redmi", "Andriod", "Blue", 34000);
        System.out.println(r.toString());
    }
}

```

| | Test | Expected | Got | |
|---|---|---|---|---|
| ✓ | 1 | `manufacturer = Redmi`<br>`operating_system = Andriod`<br>`color = Blue`<br>`cost = 34000` | `manufacturer = Redmi`<br>`operating_system = Andriod`<br>`color = Blue`<br>`cost = 34000` | ✓ |

Passed all tests! ✓

Question **3**

Correct

Marked out of 5.00

Create a class Student with two private attributes, name and roll number. Create three objects by invoking different constructors available in the class Student.

Student()

Student(String name)

Student(String name, int rollno)

**Input:**

No input

**Output:**

**No-arg constructor is invoked**
**1 arg constructor is invoked**
**2 arg constructor is invoked**
**Name =null , Roll no = 0**
**Name =Rajalakshmi , Roll no = 0**
**Name =Lakshmi , Roll no = 101**

**For example:**

| Test | Result |
|---|---|
| 1 | `No-arg constructor is invoked`<br>`1 arg constructor is invoked`<br>`2 arg constructor is invoked`<br>`Name =null , Roll no = 0`<br>`Name =Rajalakshmi , Roll no = 0`<br>`Name =Lakshmi , Roll no = 101` |

**Answer:** (penalty regime: 0 %)

```java
public class Student {
    private String name;
    private int roll;

    Student() {
        this.name = null;
        this.roll = 0;
    }

    Student(String name) {
        this.name = name;
        this.roll = 0;
    }

    Student(String name, int roll) {
        this.name = name;
        this.roll = roll;
    }

    public void display() {
        System.out.println("Name ="+name+" , Roll no = "+roll);
    }

public static void main(String[] args) {
        Student s = new Student();
        Student s1 = new Student("Rajalakshmi");
        Student s2 = new Student("Lakshmi", 101);
        System.out.println("No-arg constructor is invoked\n1 arg constructor is invoked\n2 arg constructor is inv
        s.display();
        s1.display();
        s2.display();
    }
}

```

|  | Test | Expected | Got |  |
|---|---|---|---|---|
| ✓ | 1 | No-arg constructor is invoked<br>1 arg constructor is invoked<br>2 arg constructor is invoked<br>Name =null , Roll no = 0<br>Name =Rajalakshmi , Roll no = 0<br>Name =Lakshmi , Roll no = 101 | No-arg constructor is invoked<br>1 arg constructor is invoked<br>2 arg constructor is invoked<br>Name =null , Roll no = 0<br>Name =Rajalakshmi , Roll no = 0<br>Name =Lakshmi , Roll no = 101 | ✓ |

Passed all tests! ✓

◄ Lab-04-MCQ

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