Chapter 9 Practice Set Questions by Munawar

Questions

1. Create a class cylinder and use getters and setters to set its radius and height.

Solution

```
//  Questions 1
class Cylinder{
    private int radius;
    private int height;

    public int getRadius() {
        return radius;
    }

    public void setRadius(int radius) {
        this.radius = radius;
    }

    public int getHeight() {
        return height;
    }

    public void setHeight(int height) {
        this.height = height;
    }
}
```

```
// Question 1
Cylinder mycylinder=new Cylinder();
mycylinder.setHeight(16);
int h=mycylinder.getHeight();
System.out.println(h);

mycylinder.setRadius(4);
int r=mycylinder.getRadius();
System.out.println(r);
```

2. Use question 1 to calculate surface area and volume of the cylinder.

Solution

```
// Question 2
public void setHeight(int height) {
    this.height = height;
}
public double SurfaceArea(){
    return 2*Math.PI*radius*radius+2*Math.PI*radius*height;
}
public double Volume(){
    return Math.PI*radius*radius*height;
}
```

```
// Question 2
System.out.println(mycylinder.SurfaceArea());
System.out.println(mycylinder.Volume());
```

3. Use a Constructor and repeat Question 1.

Solution

```
ass Cylinder{
    private int radius;
    private int height;


    // Question 3
    public Cylinder(int radius, int height) {
        this.radius = radius;
        this.height = height;
    }
//
    public int getRadius() {
        return radius;
    }
//
//    public void setRadius(int radius) {
//        this.radius = radius;
//    }
//
    public int getHeight() {
        return height;
    }
//
```

```
// Question 3
Cylinder cy=new Cylinder(4,5);
System.out.println(cy.getHeight());
System.out.println(cy.getRadius());
```

4. Create a class Rectangle 8 repeat 3.

Solution

```
class Rectangle{
        private int length;
        private int height;

    public Rectangle(int length, int height) {
        this.length = length;
        this.height = height;
    }
    public Rectangle() {
        this.length = 4;
        this.height = 5;
    }

    public int getLength() {
        return length;
    }

    public int getHeight() {
        return height;
    }
}
```

```
// Question 4
// for default constructor
Rectangle rect=new Rectangle(5,77);
System.out.println("This is height"+rect.getHeight());
System.out.println("This is lenght"+rect.getLength());
// for custom constructor

Rectangle cusReact=new Rectangle();
System.out.println(cusReact.getHeight());
System.out.println(cusReact.getLength());
```

5. Repeat Question 1 for a sphere.

Solution

```
// Question 5
class Sphere{
    private int raduis;

    public Sphere(int raduis) {
        this.raduis = raduis;
    }
```

```
    public double getArea() {
        return 4*Math.PI*raduis*raduis;
    }
}
```

```
// Question 5
Sphere sp=new Sphere(4);
System.out.print("Area is : ");
System.out.println(sp.getArea());
```

Source code:

```
import javax.swing.plaf.synth.SynthTextAreaUI;
import java.util.Scanner;
//class Cylinder{
//    private int radius;
//    private int height;


//    // Question 3
//    public Cylinder(int radius, int height) {
//        this.radius = radius;
//        this.height = height;
//    }
////
//    public int getRadius() {
//        return radius;
//    }
////
////    public void setRadius(int radius) {
////        this.radius = radius;
////    }
////
//    public int getHeight() {
//        return height;
//    }
////
////    // Question 2
////    public void setHeight(int height) {
////        this.height = height;
////    }
////    public double SurfaceArea(){
////        return 2*Math.PI*radius*radius+2*Math.PI*radius*height;
////    }
////    public double Volume(){
////        return Math.PI*radius*radius*height;
////    }
////}

 // Question 4

//class Rectangle{
```

```
//        private int length;
//        private int height;
//
//    public Rectangle(int length, int height) {
//        this.length = length;
//        this.height = height;
//    }
//    public Rectangle() {
//        this.length = 4;
//        this.height = 5;
//    }
//
//    public int getLength() {
//        return length;
//    }
//
//    public int getHeight() {
//        return height;
//    }
//}

// Question 5
class Sphere{
    private int raduis;

    public Sphere(int raduis) {
        this.raduis = raduis;
    }

    public double getArea() {
        return 4*Math.PI*raduis*raduis;
    }
}
public class Main {
    public static void main(String[] args) {

//        // Question 1
//        Cylinder mycylinder=new Cylinder();
//        mycylinder.setHeight(16);
//        int h=mycylinder.getHeight();
//        System.out.println(h);
//
//        mycylinder.setRadius(4);
//        int r=mycylinder.getRadius();
//        System.out.println(r);
//
//        // Question 2
//        System.out.println(mycylinder.SurfaceArea());
//        System.out.println(mycylinder.Volume());
//
//        // Question 3
//        Cylinder cy=new Cylinder(4,5);
//        System.out.println(cy.getHeight());
//        System.out.println(cy.getRadius());


//        // Question 4
```

```
//         // for default constructor
//         Rectangle rect=new Rectangle(5,77);
//         System.out.println("This is height"+rect.getHeight());
//         System.out.println("This is lenght"+rect.getLength());
//         // for custom constructor
//
//         Rectangle cusReact=new Rectangle();
//         System.out.println(cusReact.getHeight());
//         System.out.println(cusReact.getLength());

        // Question 5
        Sphere sp=new Sphere(4);
        System.out.print("Area is : ");
        System.out.println(sp.getArea());

    }

}
```

Thank You