

```
public interface Shape
{
    double calculateArea();
    double calculatePerimeter();
}

public class Circle implements Shape
{
    private int radius;

    public Circle(int radius)
    {
        this.radius = radius;
    }

    @Override

    public double calculateArea()
    {
        double Area = (Math.PI * radius * radius);
        return Area;
    }

    @Override

    public double calculatePerimeter()
    {
        double perimeter = (float) (2 * Math.PI * radius);
        return perimeter;
    }
}
```

```
}  
  
public class Rectangle implements Shape  
{  
    private int length;  
    private int width;  
  
    public Rectangle(int length, int width)  
    {  
        this.length = length;  
        this.width = width;  
    }  
  
    @Override  
    public double calculateArea()  
    {  
        double area = length * width;  
        return area;  
    }  
  
    @Override  
    public double calculatePerimeter()  
    {  
        double perimeter = 2 * (length + width);  
        return perimeter;  
    }  
}  
  
public class Shapemain  
{
```

```

public static void main(String[] args)
{
    Circle circle=new Circle(5);
    Rectangle rectangle=new Rectangle(5,10);
    Triangle triangle = new Triangle(3.0, 4.0, 5.0);

    System.out.println("Circle Area :"+circle.calculateArea());
    System.out.println("Circle Area :"+circle.calculatePerimeter());

    System.out.println("Rectangle Area :"+rectangle.calculateArea());
    System.out.println("Rectangle Perimeter :"+rectangle.calculatePerimeter());

    System.out.println("Triangle Area :"+triangle.calculateArea());
    System.out.println("Triangle Perimeter :"+triangle.calculatePerimeter());

}
}
public class Triangle implements Shape
{
    private double sideA;
    private double sideB;
    private double sideC;

    public Triangle(double sideA, double sideB, double sideC)
    {
        this.sideA = sideA;

```

```
    this.sideB = sideB;  
    this.sideC = sideC;  
}
```

```
@Override  
public double calculateArea()  
{  
    double semiPerimeter = (sideA + sideB + sideC) / 2.0;  
    double area = Math.sqrt(semiPerimeter * (semiPerimeter - sideA) * (semiPerimeter -  
sideB) * (semiPerimeter - sideC));  
    return area;  
}
```

```
@Override  
public double calculatePerimeter()  
{  
    double perimeter = sideA + sideB + sideC;  
    return perimeter;  
}  
}
```