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

public class Circle implements Shape {
   private double radius;

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

   public double getRadius() {
      return radius;
   }

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

   @Override
   public double calculateArea() {
      return Math.PI * radius * radius;
   }
   @Override
   public double calculatePerimeter() {
      return 2 * Math.PI * radius;
   }
}

public class Rectangle implements Shape {
   private double length;
   private double width;

   public Rectangle(double length, double width) {
      this.length = length;
      this.width = width;
   }


   public double getLength() {
      return length;
   }

   public void setLength(double length) {
      this.length = length;
   }
```

```
    public double getWidth() {
        return width;
    }

    public void setWidth(double width) {
        this.width = width;
    }


    @Override
    public double calculateArea() {
        return length * width;
    }
    @Override
    public double calculatePerimeter() {
        return 2 * (length + width);
    }
}

public class Triangle implements Shape {
    private double a;
    private double b;
    private double c;


    public Triangle(double a, double b, double c) {
        this.a = a;
        this.b = b;
        this.c = c;
    }

    public double getSideA() {
        return a;
    }

    public void setSideA(double a) {
        this.a = a;
    }

    public double getSideB() {
        return b;
    }

    public void setSideB(double b) {
        this.b= b;
    }

    public double getSideC() {
```

```
        return c;
    }

    public void setSideC(double sideC) {
        this.c = c;
    }

    @Override
    public double calculateArea() {
        double s = (a+ b + c) / 2;
        return Math.sqrt(s * (s - a) * (s - b) * (s - c);
    }

    // Implementation of calculatePerimeter method for Triangle
    @Override
    public double calculatePerimeter() {
        return a+ b+ c;
    }
}
public class Main {
    public static void main(String[] args) {
        Circle cr= new Circle(5);
        System.out.println("Circle Area: " + cr.calculateArea());
        System.out.println("Circle Perimeter: " + cr.calculatePerimeter());

        Rectangle rc = new Rectangle(4, 6);
        System.out.println("Rectangle Area: " + rc.calculateArea());
        System.out.println("Rectangle Perimeter: " + rc.calculatePerimeter());

        Triangle tg = new Triangle(3, 4, 5);
        System.out.println("Triangle Area: " + tg.calculateArea());
        System.out.println("Triangle Perimeter: " + tg.calculatePerimeter());
    }
}
```