Selected files

2 printable files

Lab 2\Question 2 Triangle Calculation\Triangle.java
Lab 2\Question 2 Triangle Calculation\TriangleTesting.java

Lab 2\Question 2 Triangle Calculation\Triangle.java

```java
public class Triangle {
    private Point2D p1;
    private Point2D p2;
    private Point2D p3;

    // Initialization constructor
    public Triangle(Point2D p1, Point2D p2, Point2D p3) {
        this.p1 = p1;
        this.p2 = p2;
        this.p3 = p3;
    }

    // Calculate the perimeter of the triangle
    public double perimeter() {
        double side1 = p1.distance(p2);
        double side2 = p2.distance(p3);
        double side3 = p3.distance(p1);
        return side1 + side2 + side3;
    }

    // Calculate the area of the triangle using Heron's formula
    public double area() {
        double side1 = p1.distance(p2);
        double side2 = p2.distance(p3);
        double side3 = p3.distance(p1);
        double s = (side1 + side2 + side3) / 2;
        return Math.sqrt(s * (s - side1) * (s - side2) * (s - side3));
    }
}

```

Lab 2\Question 2 Triangle Calculation\TriangleTesting.java

```java
public class TriangleTesting {
    public static void main(String[] args) {
        Point2D p1 = new Point2D();
        Point2D p2 = new Point2D(2, 7);
        Point2D p3 = new Point2D(3, 4);

        System.out.println(p1);
        System.out.println(p2);
        System.out.println(p3);

        Triangle myTriangle = new Triangle(p1, p2, p3);
        System.out.printf("The perimeter is %.2f\n", myTriangle.perimeter());
        System.out.printf("The area is %.2f\n", myTriangle.area());
    }
}
```