Task 1: (35 Minutes)

Write a class named Point which has the following instance variables:

a. x (double)
b. y (double)

Then create appropriate constructors, getter & setter methods, toString method so that the following TestPoint.java class works smoothly and gives the following output.

TestPoint.java

```
public class TestPoint {
   public static void main(String[] args) {
        Point p1 = new Point();
        System.out.println(p1);
        System.out.println(p1.getQuadrantNumber());

        Point p2 = new Point(100, 100);
        System.out.println(p2);
        System.out.println(p2.getQuadrantNumber());

        Point p3 = new Point(-100, 100);
        System.out.println(p3);
        System.out.println(p3.getQuadrantNumber());

        Point p4 = new Point(100, -100);
        System.out.println(p4);
        System.out.println(p4.getQuadrantNumber());

   }
}
```

Output:

```
Point: x = -400, y = -400
4
Point: x = 100, y = 100
2
Point: x = -100, y = 100
3
Point: x = 100, y = -100
1
```

Task 2: (50 minutes)

Write a class named Rectangle which has the following instance variables.

a. listOfPoints: an 1d array of Points

Complete the following methods of class Rectangle.

a. Rectangle()
b. Rectangle (Point p1, Point p2, Pont p3, Point p4)
c. Rectangle (Point[] p)
d. toString(): This should return the xs' and ys' of the 4 points of a rectangle, e.g. Rectangle: P1: (10, 10), P2: (10, 30), P3: (0, 10), P4: (0, 30)

Write a tester class named TestRectangle and do the following.

a. Create a Rectangle r1 with the no-arg constructor
b. Invoke toString method for Rectangle r1

c. Create 4 points named p1(10, 10), p2(10, 30), p3(0, 10), p4(0, 30)
d. Create a Rectangle r2 with the 4 points that you have just created: p1, p2, p3 and p4
e. Invoke toString method for Rectangle r2

f. Create an array of Points named pArray of size 4 and populate with p1, p2, p3 and p4
g. Create a Rectangle r3 with the array pArray.
h. Invoke toString method for Rectangle r3