ICS4U Module 4: Note & Exercise 1c

Instance & Class Members

- Accessor & Modifier methods are *instance methods* because they change the state of an object and must be called from an instance of a class (such as called from the Circle named spot)

- Class methods (declared with the keyword `static`) can be called from the class itself

Add this class method to the Circle class:	And call it from client code like this:

`/*`
` * Displays the formula for the area of a * circle`
` * pre: none`
` * post: The formula for area of a circle * has been displayed`
` */`
`public static void displayAreaFormula() {`
 	
` System.out.println("The formula for the area of a circle is a = pi*r*r");`
 	
`}`
	`public class TestCircle {`
	` public static void main(String[] args)`
	`{ Circle spot = new Circle(5);`
	
	` System.out.println("Circle radius:" + spot.getRadius());`
	` System.out.println("Circle area:" + spot.area());`
	` Circle.displayAreaFormula();`
	` }`
	`}`

Output:

Circle radius: 5.0
Circle area: 78.5
The formula for the area of a circle is a=Pi*r*r

Programming Exercise:

a) Modify the Circle class to include a class method named `displayAreaFormula`, as shown in the previous section. Modify existing

client code to test the new method

```
public class Question1 {


    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Circle circle = new Circle ();
        circle.displayAreaFormula();


    }


}


class Circle {
    /*
     * Displays the formula for the area of a circle pre: none post: The formula
    for
     * area of a circle has been displayed
     */
```

```
    public static void displayAreaFormula() {

        System.out.println("The formula for the area of a circle is a = pi*r*r");

    }

}
```

b) Modify the Rectangle class to include a class method named `displayAreaFormula`. Modify existing client code to test the new method.

```
public class Question2 {


    public static void main(String[] args) {

        // TODO Auto-generated method stub

        Rectangle rectangle = new Rectangle ();

        rectangle.displayAreaFormula();


    }


}

class Rectangle {

    /*
```

```
     * Displays the formula for the area of a circle pre: none post: The formula for
     * area of a circle has been displayed
     */
    public static void displayAreaFormula () {
        System.out.println("The formula for the area of a Rectangle  is a = l*w");
    }
}
```

Do not submit your code for either part a or part b just yet.