Introduction to Java Classes

a) Create a class named *Circle* with fields named radius, diameter, and area. Include a constructor that sets the radius to 1 and calculates the other two values. Also include methods named *setRadius()* and *getRadius()*. The *setRadius()* method not only sets the radius, it also calculates the other two values. (The diameter of a circle is twice the radius, and the area of a circle is *pi* multiplied by the square of the radius). Save the class as ***Circle.java***.

b) Create a class named *TestCircle* whose main() method declares several Circle objects. Using the *setRadius()* method, assign one Circle a small radius value, and assign another a larger radius value. Do not assign a value to the radius of the third circle; instead, retain the value assigned at construction. Display all the values for all the Circle objects. Save the application as ***TestCircle.java***.

Please submit the following two items to your instructor.

1. The program source code (the .java file)
2. The program output

Points will be given based on the following requirements:

1. The assignment meets the program prerequisites as specified in the question. Your program executes without errors, runs accordingly, and produces correct output.

2. Your program includes overall documentation; i.e. explain what the program is attempting to do; function documentations; complex code documentation. Your program follows the standard practice programming style: i.e. code indentation, spacing between block of codes, functions, and uses meaningful variable names. Your program applied the best possible programming logic approach: i.e. the logic flow of your program is rational and coherent.

3. Did you submit the following required files; your source code program file (.java file), and your program output file? Was the program output presented/displayed in readable and meaningful fashions.