Problem Description

Write a complete Java class called Circle, which represents a mathematical circle. The class has only one private instance variable name radius which represents the radius of the circle. All the methods of the class are non-static except the method named area. The methods you must implement are:

1. Default Constructor – Initializes the radius to 1.0.
2. Constructor – Initializes the radius with the single parameter value (of type double).
3. getRadius – Returns the radius.
4. increaseRadius – Increases the radius by the single parameter value (of type double).
5. toString – Returns a string with the string “Radius: ” followed by the radius value.
6. equals – Boolean method that tests whether the current object has the same radius as another Circle, which is given as the single parameter.
7. doubleRadius – Returns a reference to a new Circle whose radius is twice the radius of the current object. The current object is not modified.
8. area – A static method that returns the area of the Circle given as the single parameter. The area of a circle is defined as (π * radius * radius). You can use the Java constant Math.PI for the value of π.

Restrictions/Assumptions

1. You don’t need to use meaningful variable names; however you must use good indentation.
2. You don’t need to provide comments.
3. You cannot add any other instance variables or methods.

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