**ICS 102 – Introduction to Computing**

**Spring Semester 152**

**Quiz # 2 Key**

**ID: Name:**

Define a class Rectangle that calculates the area of any rectangle. It should have two instance variables of double type – length and width. The class should have a parameterized constructor than takes the length and width. It should also have a parameterized constructor that takes only the width and sets the length equals width. Include a method that returns the area of the rectangle and a method that returns true if it is a square or false otherwise. Also, include a toString method. Write a program to test all the methods in your class definition.

**public class Rectangle**

**{**

 **private double length, width;**

 **public Rectangle(double length, double width)**

 **{**

 **this.length = length;**

 **this.width = width;**

 **}**

 **public Rectangle(double side)**

 **{**

 **this(side, side);**

 **}**

 **public double getArea()**

 **{**

 **return length \* width;**

 **}**

 **public boolean isSquare()**

 **{**

 **return length == width;**

 **}**

 **public String toString()**

 **{**

 **return "length = " + length + " width = " + width;**

 **}**

**}**

**public class RectangleTest**

**{**

 **public static void main(String[] arg)**

 **{**

 **Rectangle r1 = new Rectangle(10, 5);**

 **System.out.println(r1);**

 **System.out.println(" area = " + r1.getArea());**

 **System.out.println(" is it a square ? " + r1.isSquare());**

 **Rectangle r2 = new Rectangle(10);**

 **System.out.println(r2);**

 **System.out.println(" area = " + r2.getArea());**

 **System.out.println(" is it a square ? " + r2.isSquare());**

 **}**

**}**