**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());**

**}**

**}**