AP Computer Science Name:

Term 2 Exam 1

1) (25pts) Assume that MyPoint, given below, has been fully and correctly implemented but whose implementation is not shown. Use MyPoint to complete the code for the MyCircle class. You do not have to write any code for MyPoint.

public class MyPoint{

//implementation not shown.

private double x,y;

public MyPoint(double initialX, double initialY){}

public double getX(){}

public double getY(){}

public void setX(double newX){}

public void setY(double newY){}

public String toString(){}

public double distance(MyPoint other){}

}

public class MyCircle{  
 MyPoint center;

double radius;

public MyCircle(double x, double y, double r){

}

public MyCircle(MyPoint c, double r){

}

//move the center horizontally by dx units and vertically by dy units.

public void translate(double dx, double dy){

}

//returns the distance between two given circles(center to center).

**//you must use distance from MyPoint.**

public static double distance(MyCircle a, MyCircle b){

}

//return the circle which is the reflection of the given

// circle over the x-axis

public static MyCircle reflectX(MyCircle a){

2) (20pts) Complete the main method from the driver class Driver.java as instructed below. Assume that MyPoint and MyCircle classes above have been correctly and fully implemented. Write your code below each comment.

public static void main(String[] args){

//create a point p1 at (-3,5) using MyPoint.

//create a circle c1 centered at (1,2) with radius=3 using the

//first constructor of MyCircle.

//create a circle c2 centered at p1 with radius=10 using the

//second constructor of MyCircle.

//translate c1 left 4 units and up 8 units.

//print out the center and radius of c2

//your output should be:

//Center: (-3,5) Radius: 10

//you must use toString() of MyPoint.

//compute the distance between c1 and c2 and

//store the value in a variable called distance.

//Print out distance. You must use distance from MyCircle.

}

3) (35pts) Consider the Employee class below. Follow the instructions below to complete the implementation of Employee and EmployeeTester classes.

public class Employee{

String first;

String last;

private double monthlySalary;

public static int numOfEmployees=0;

// implementation not shown.}

Write two constructors 1) A constructor with two parameters to set first and last name. This constructor should set monthlySalary to 0. 2) A constructor to set all three object fields. Each constructor should increase the count of numOfEmployees by one.

Write five methods: getSalary, setSalary to get and set monthly salary. getNumOfEmployees to get the number of employees. printYearlySalary()to print the full name of the employee and their YEARLY salary. An example of the output is: “Mike Smith makes $60000.0 per year”. toString() to return a String representation of Employee which is last name followed by a comma and their first name.

Write a short EmployeeTester class to test the Employee class. Create two Employee objects. The first employee object e1 should be created with the first constructor with two parameters. Set this employee’s monthly salary to $5,000. Print e1. Call printYearlySalary for this employee. Create the second employee object e2 with the second constructor with three parameters with a monthly salary of $6,000. Call printYearlySalary for this employee. Print e2. Then print out numOfEmployees.

The code for both classes have been partially given to you.

public class EmployeeTester

{

public static void main(String[] args){

}}

public class Employee

{ String first;

String last;

private double monthlySalary;

public static int numOfEmployees=0;

//write your implementation below.