

Name(s): _____

1. Analyze the class `Cake` presented and write all concepts and ideas you can remember regarding what is a class and how we can define and use it. Make a comment line by line.

```
public class Cake {
    public static final boolean IS_GOOD = true;
    private String name;
    private double cost;

    public void setName(String str) {
        name = str;
    }
    public String getName() {
        return name;
    }
    public void setCost(double cost) {
        this.cost = cost;
    }
    public double getCost() {
        return this.cost;
    }
    public Cake() {
        this("", 0);
    }
    public Cake(String name, double cost) {
        setName(name);
        setCost(cost);
    }
}
```

2. Identify: class variables (scope and type), instance variables (scope and type). What is the purpose of the class variable in this example? How can we access the class variable from another class? How can we access the instance variable from another class? Write a `StoreApp` class to have a `main` method and in that method creates an `ArrayList` of `Store`, add three `Store` objects into the `ArrayList` and print the current value of `nextId`.

```
public class Store {
    public static int nextId = 101;
    private String name;
    private String type;
    private int id;

    public Store(String storeName, String storeType) {
        name = storeName;
        type = storeType;
        id = nextId;

        ++nextId;
    }

    public int getId() {
        return id;
    }
}
```

3. Rewrite the class `Pet` to have its constructors properly overloaded.

CS164: More Classes Worksheet

Name(s): _____

```
public class Pet {
    private String name;
    private int age;

    public Pet() {
        name = "Unnamed";
        age = -1;
    }

    public Pet(String petName, int yearsOld) {
        name = petName;
        age = yearsOld;
    }

    public String toString() {
        return name + ", " + age;
    }
}
```

4. Explain each line of the main method. For the method writeHTMLFile, explain how many parameters it receives and what the method does.

```
import java.io.*;
public class HTMLFileWriteSample {
    public static void writeHTMLFile(PrintWriter printer, String innerHTML) {
        printer.println("<!DOCTYPE html>");
        printer.println("<html>");
        printer.println("    <body>");
        printer.println("        <p>" + innerHTML + "</p>");
        printer.println("    </body>");
        printer.println("</html>");
    }
    public static void main(String[] args){
        try{
            String fileName = "simple.html";
            PrintWriter filePrinter = new PrintWriter(new File(fileName));
            writeHTMLFile(filePrinter, "Hello <b>HTML</b> world!");
            filePrinter.close();
            PrintWriter systemOutPrinter = new PrintWriter(System.out);
            writeHTMLFile(systemOutPrinter, "Hello <b>HTML</b> world!");
            systemOutPrinter.close();
        }catch(IOException exp){
            exp.printStackTrace();
        }
    }
}
```

5. What is the difference between adding “import java.util.Scanner;” and “import java.util.*;” in a program?