Exercise 1:

Create a class Box that uses a parameterized method to initialize the dimensions of a box.(dimensions are width, height, depth of double type). The class should have a method that can return volume. Obtain an object and print the corresponding volume in main() function.

Exercise 2:

Create a new class called “Stock” which contains the following:

1. A String for the stock name

2. A String for the stock symbol

3. A double storing the previous closing price of the stock

4. A double storing the current closing price of the stock

5. A constructor that allows you to define a stock’s name, symbol, previous closing price and current closing price

6. A method getChangePercentage() that returns the percentage change from the previous closing price to the current closing price

Exercise 3:

Create a new class called “RandomHelper” which contains the following:

1. A static method called randint that accepts two integers and returns a random integer between them. Make sure that the numbers are inclusive (i.e. if you call randomint(1,10) you should be able to generate both 1 and 10.

2. A static method called randdouble that accepts two integers and returns a random double between them. For this method you should be able to generate numbers such that 1 <= x < 10 for the method call randdouble(1,10)

3. Call your method from another class without instantiating the class (i.e. call it just like you would call Math.random() since your methods are defined to be static)

Exercise 4:

Design a class that implements a Fan. Here’s what your class should contain:

1. Static constants SLOW, MEDIUM and FAST that store the integers 1, 2 and 3

2. Private int named speed that defaults to SLOW

3. Private boolean named on that defaults to false

4. Private double named radius that defaults to 5

5. Private String named color that defaults to “red”

6. A no-arg constructor

7. Getters and setters for each field, making sure to perform appropriate data vaildation prior to making changes to any field

8. A method toString() that returns a String summary of the current status of your fan

Exercise 5:

Design a class that can be used by a health care professional to keep track of a patient’s vital statistics. Here’s what the class should do:

1. Construct a class called Patient

2. Store a String name for the patient

3. Store weight and height for patient as doubles

4. Construct a new patient using these values

5. Write a method called BMI which returns the patient’s BMI as a double. BMI can be calculated as BMI = ( Weight in Pounds / ( Height in inches x Height in inches ) ) x 703

6. Next, construct a class called “Patients” that creates 10 patients and stores them in an array. Defautl each patient to a random height and weight. Iterate over the array and report all patient’s who’s BMI is over 25.0