Practice Midterm 1

Chapters 1 - 2

**You have 30 minutes to work on this exam. Answer each question to the best of your ability. If you are stumped, or don’t know how to write a specific piece of code, use comments, or sudo code, to describe the process or steps necessary to writing the program. Make tables to keep track of variables for each method.**

**Good Luck ☺**

**1. What is the output of the following program?**

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

**{**

**int x = 9;**

**int y = 47;**

**int z = 15;**

**x = z / 4;**

**z = z - x;**

**for(int i = 1; i < z-8; i++) {**

**System.out.print("Line i-1: ");**

**for(int j = 1; j <= x\*i; j++) {**

**System.out.print(j\*i + " ");**

**}**

**for(int k = (2\*i) / 5; k > 0; k--) {**

**System.out.print((double)k);**

**for(int e = i; e > 0; e--) {**

**System.out.print(i);**

**}**

**}**

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

**}**

**}**

**Output:**

**Line i-1: 1 2 3**

**Line i-1: 2 4 6 8 10 12**

**Line i-1: 3 6 9 12 15 18 21 24 27 1.0333**

**2. What is the output of the following program?**

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

**{**

**int max;**

**double min = 10;**

**min--;**

**max = 17 - (4 / 10) \* 3 - 2 % 5;**

**max = max + 8 % 2 \* 5 + 1;**

**++max;**

**min = (double)max - min;**

**System.out.println((double)max \* 2/4);**

**// Do the calculation with max as 17 and min as 9.0. THEN SUBTRACT max by 1 AFTER the calculation.**

**System.out.println(max-- + ++min);**

**System.out.println(--max); // Subtract max by one BEFORE printing it out**

**System.out.println(min++ % 4 + 1);**

**}**

**Output:**

**8.5**

**26.0**

**15**

**2.0**

**3. Write a class named BoxFigure that produces the following pattern. Create two helper methods, drawPlus() that prints the** +/\/\/\+ **and drawBars() that prints the** | |

**Create a** public static final int SIZE **to determine the size of the pattern that needs to be printed. Below are the outputs for sizes 3 and 5:**

**Size 3 Size 5**

**+/\/\/\+ +/\/\/\/\/\+**

**| | | |**

**| | | |**

**| | | |**

**+/\/\/\+ | |**

**| |**

**+/\/\/\/\/\+**

**Write out the entire class, including the class name, main method and two helper methods.**

**public class BoxFigure**

**{**

**public static final int SIZE = 5;**

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

**{**

**drawPlus();**

**for(int line = 1; line <= SIZE; line++)**

**{**

**drawBars();**

**}**

**drawPlus();**

**}**

**public static void drawPlus()**

**{**

**System.out.print("+");**

**for(int i = 1; i <= SIZE; i++)**

**{**

**System.out.print("/\\");**

**}**

**System.out.println("+");**

**}**

**public static void drawBars()**

**{**

**System.out.print("|");**

**for(int i = 1; i <= SIZE\*2; i++)**

**{**

**System.out.print(" ");**

**}**

**System.out.println("|");**

**}**

**}**