Java Programming
Exam #1

Name: _____ *(.5 point)*

Date: _____ *(.5 point)*

1. **For each of the following variable names, circle "legal" or "error".** *(12 points)*

a.)	`firstName`	**legal**	**error**	**d.)**	`$uffix`	**legal**	**error**
b.)	`la$tName`	**legal**	**error**	**e.)**	`&SSN`	**legal**	**error**
c.)	`9LIVES`	**legal**	**error**	**f.)**	`_Emp_Num`	**legal**	**error**

2. **Choose meaningful names and write a single variable declaration for each of the following values.** *(12 points)*

a.) `Net income on paycheck.`

b.) `Floor number in a building.`

c.) `Fire alarm is on or off`

d.) `Letter on a computer keyboard.`

3. Rewrite the Java program with corrected syntax using the space provided below. *(15 points)*

```
1  import java.util.Scanner;
2
3  //
4   * Jim Smith
5   * File: DaysToSeconds.java
6   //
7  publix class DaysToSeconds {
8      public static void main(String args) {
9          Scanner in = new Scanner(System.in);
10         final int HOURS_IN_DAY = 24;
11         final int MINUTES_IN_HOUR = 60f;
12         final int SECONDS_IN_MINUTE = 60;
13         int secondsInDay = HOURS_IN_DAY x MINUTES_IN_HOUR x SECONDS_IN_MINUTE;
14         double totalDays 0.0;
15         double totalSeconds 0.0;
16
17         System.out.print('Enter the number of days to convert to seconds: ')
18         totalDays = in.nextDouble();
19
20         totalSeconds = totalDayz * secondsInDay;
21
22         System.out.print(totalDays " days is equal to ");
23         System.out.println(totalSeconds + " seconds.");
24     }
25 }
```

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4. Do a hand simulation. *(10 points)*

```
public class ExamVariables {
    public static void main(String args[]) {
        int gamma = 6;
        int delta = 12;
        int zeta = 0x40;
        char alpha = 'z';
        char beta = '2';
        char phi = 'B';

        System.out.println("1. " + (zeta / delta) + " " + (delta / gamma));
        System.out.println("2. " + zeta + " " + (delta + zeta));
        System.out.println("3. " + (beta + 5) + " " + (beta + 14));
        System.out.println("4. " + (char)(alpha - beta) + " " + (phi - '!'));
    }
}
```

Memory

gamma

delta

zeta

alpha

beta

phi

Screen

5. The equation to calculate the area of a trapezoid is $a = \left(\frac{(b_1+b_2)}{2}\right) * h$, where a is the area of the trapezoid, b_1 is the length of the first base, b_2 is the length of the second base, and, h is the height. Write an interactive Java class named <u>TrapezoidArea</u> which prompts the user to enter a value for the <u>integer</u> variables base1, base2, and height. The program will then calculate the area of the trapezoid as a double and print the result to the screen. (For the screen simulation, have the user type in 14 inches for base1, 10 inches for base2, and 5 inches for the height) *(20 points)*

```
import java.util._________________;

/*
 * Calculate area of a trapezoid; a = ((b1 + b2) / 2) * h
 */
public class ______________________________ {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);









    }
}
```

Screen

6. Given the following values for boolean variables p, q, r, s, evaluate each condition. *(16 points)*

f = false, g = false, h = true, i = true

a.) `f || g  &&  h || i`

b.) `f && g && !h && !i`

c.) `(f && g) || (h && i)`

d.) `!(f || g) && h && i`

7. Do a hand simulation of this program. *(15 points)*

```
public class Exam1Quest7 {
    public static void main(String args[]) {
        int x = 7;
        int y = 1;

        if (x != y) {
            x *= y++;
        }

        if (y <= x) {
            y *= x;
        } else {
            x *= y;
        }

        if (x != y) {
            y = y / (y / x);
        }

        System.out.println("x: " + x);
        System.out.println("y: " + y);
    }
}
```

Memory

x

y

Screen

BONUS *(5 points)*

Write the Java class HelloWorld that outputs the string "Hello World!" to the screen.