Ryerson Polytechnic University   ***School of Computer Science***

CPS 109   Midterm Test   Fall 98

Last Name	
Student Number	
Lab Section Number (Circle your lab section #) (Hint: it's the same one you click to submit a lab)	**1** **2** **3** **4** **5** **6**

Instructions:
❑   There are 4 questions on this test . The test is worth 30% of your final mark.
❑   There is a time limit of 1 hour.
❑   Write your answers on the blank sheets provided. Make sure you put your name and student # on everything
❑   Clearly identify which question you are answering.
❑   Please include comments to explain what you are doing.

1)   (8 marks) Write a java application which prints a triangle of x's and y's like the one below. Each new line will have one more x or y than the preceding line. The program should stop after it prints a line with 80 characters in it. You may make use of both the print() and println() methods. For example;

```
x
YY
xxx
YYYY
xxxxx
...
```

2)   (6 marks) Write the java function (no need for the complete application) which implements the following interface.
❑   Syntax:

```
public double dollars
    (int pennies, int nickles, int dimes, int quarters)
```

❑   Semantics:
`dollars` takes as parameters a count of how many pennies, nickles, dimes and quarters you have and it returns the number of dollars that this adds up to. For example, if you had 1 penny, 2 nickles and 5 quarter, `dollars` would return the double value 1.36

3) (8 marks, 1 mark per correct circle, -1 mark per incorrect circle) Circle 8 syntax or logic errors in the following java application and briefly explain what is wrong beside your circle.

```java
public class Question3
{
      public static final SEVEN = 7

      public void mulbySEVEN(int val)
      {
            return Seven x val;
      }

      public static void main(String[] args)
      {
            val = Console.in.readInt();
            System.out.println("Enter an integer.");
            System.out.println(mulbySEVEN(val));
      }
}
```

4) (8 marks, 1 mark per question) Answer the following questions.

I.   What is a "class" in object oriented programming (OOP)

II.   What is an "object" in OOP

III.   What do we mean by the term "syntax"?

IV.   What do we mean by the term "semantics"?

V.   With respect to an expression, what is an "operand"?

VI.   With respect to an expression, what is an "operator"?

VII.   What do the letters JDK stand for with respect to java?

VIII.   What message is currently shown on Alex's "plant cam"?