**ECE 15200: Programming for Engineers**

**Purdue University Northwest, ECE Department**

Laboratory 1

**Instructions**:

* Make sure you can compile and run “Hello World” program successfully.
* Submit only C++ source files (\*.cpp) for all the problems through Brightspace.
* Name each file following the format ***Lastname\_*Lab*X*\_p*Y*.cpp**, replace *Lastname, X,* and *Y* with your last name, lab #, and problem #, respectively.
* Put your name, assignment number, and date on the top of each source file (\*.cpp) using multi-line comment as given below:

/\*

Class: ECE15200

Author: [Your Name]

Assignment: Lab [No.]

Date: [MM]/[DD]/[YY]

\*/

Remove the brackets after updating the information in them.

* PLEASE WORK ALONE. If any plagiarism is found, you will get ZERO. Never hesitate to discuss with the instructor/TA if stuck in any assignment problem.

**Problem 1.** (Lastname\_Lab1\_p1.cpp) Write a program that prints the following verse:

\*\*\*\*\* Snow flakes \*\*\*\*\*

I counted till they danced so

Their slippers leaped the town,

And then I took a pencil

To note the rebels down.

**Problem 2.** (Lastname\_Lab1\_p2.cpp) Write a program that displays the results of following expressions sequentially in separate lines. Calculate the value of each expression manually to verify that the displayed values are correct.

5+20-2

8%5/6

(8%5/6.0)+9.5

6\*3-(3+6)

3\*8/(4\*3)

3.0\*8/(4\*3)

1^3+5^3+3^3

**Problem 3.** (Lastname\_Lab1\_p3.cpp) Write a program that stores integer values 20 and 16 in variables length and width, respectively. Have your program calculate the value assigned to variables area and perimeter using the following assignment statements:

Your program should display the following sentences in the console/command window:

**The area of the rectangle is xxx.**

**The perimeter of the rectangle is xxx.**

Where **xxx** should replace the calculated values of area and perimeter. Be sure to declare all the variables as integers at the beginning of the **main()**function.

**Problem 4.** (Lastname\_Lab1\_p4.cpp) Write a program that stores the number 16.5 in the variable num1, 18.2 in the variable num2, and 10.3 in the variable num3. (Be sure to declare the variables as float). Have your program calculate the total of the three numbers and their average. The total should be stored in the variable total and the average in the variable average. Display the output as follows:

Total is xxx and Average is xxx.

Where each **x** should replace the calculated values of total and average.