

# Lab 03 - Boolean Problems & Function Definitions

**Direction:** Submit your typed work(s) as an upload(s) to the Labs directory of your GitHub repository or Dropbox, or in your correct Lab03 google classroom assignment. Each part should be a separate files. The files named should be "lab3A.txt" and "lab3B.cpp" respectively.

## Part A: In class

Your objective is to write the boolean expressions that are described below. Assume that the variables in the descriptions are already initialized.

- ☐ Write an expression that determines if an integer,  $x$ , is a multiple of both 3 and 7.
- ☐ Write an expression that determines if an integer,  $n$ , is a positive three digit number.
- ☐ Write an expression that determines if a day,  $dy$ , fell on a Monday in the month of October 2020 (the first Monday is on the 5th).
- ☐ Write an expression that determines if a string,  $wd$ , equals "no" ignoring case.

## Part B: Take home

Your objective is to write a complete cpp program that defines the following functions and calls them in the main function.

- ☐ A bool function named `OddMult7()` that takes an int parameter named  $n$ . It returns true if  $n$  is an odd multiple of 7; otherwise, it returns false.
- ☐ A double function named `Quadratic()` that takes four double parameters named  $a$ ,  $b$ ,  $c$  and  $x$  respectively. It returns the evaluation of the expression

$$ax^2 + bx + c$$

- ☐ A void function named `NumberSwap()` that takes three int reference parameters named  $a$ ,  $b$  and  $c$  respectively. It swaps the values of the parameters so that no parameter is equal to its original value, but all values are maintained without declaring a new variable. You can assume that the values of the parameters are distinct.