**Lab 2**

The purpose of this lab is to reinforce writing and calling functions in C++. Specifically, you need to construct a function that has 2 integer arguments and returns whether the first argument is a multiple of the second. The "main" function needs to test this function by using test cases which represent all possible behaviors of the function. You need to use good design principles including the preconditions and postconditions used by the author.

The purpose of the second part of the lab is to reinforce algorithm efficiency concepts. Specifically, answer the following questions showing your work.

1. Each of the following are formulas for the number of operations in some algorithm. Express each formula in big-O notation.
   1. 3n3 + 2n2 – 4
   2. 17n – 4 + 3 n4
2. What is meant by best-case analysis?
3. What is the worst-case big-O analysis of the following code fragment?

for (i = 0; i < 2 \* n; ++i) {

for (j = i; j < n - 1; ++j) {

j += n;

}

}