CS102 – Review for exam over Chapter 4

As always, know the three structures of structured programming

Vocabulary to know
Looping
Iterate, iteration
Hand tracing code
Infinite loop
Pre-Test, Post-Test loop (Also, know which C++ loop is which kind)

Loop statements
Know the syntax
Be able to code a <u>for</u>, <u>while</u>, or <u>do</u> loop
Be able to tell what's computed or printed during or after a loop
Know that a pre-test loop can be skipped entirely, but a post-test loop iterates at least once
For extra credit, know the more versatile version of the <u>for</u> loop

The <u>for</u> loop
The <u>for</u> loop is primarily for counting
It is sometimes called a counter-controlled loop
It can count up or down, and by any number

Scope of variables
Know what we have discussed about scope:
        Variables are (only) visible in the block they are declared inside

The Character Type (also string vs. char)
The character type can hold a single character
A string can certainly do this, but it stores data in a different way
The string is more wasteful for storing a single character
The type is char
You use single quotes (like ') for char data, but double quotes (like ") for string data
To get an individual character in a string, use [ ]

Shortcut Math Operators
Be able to write a C++ calculation using them
Be able to tell what is calculated by a line of C++ that uses them

Flow Charts
Be able to draw a flow chart of a loop
Most importantly, make sure your flow chart is made up (only) of structures

Typical applications of loops—Know them and the code
Input validation
Calculating a Sum and Average
Counting Spaces in a String
Finding the First Match
Finding the Maximum and Minimum
Checking If Adjacent Values Are Equal