Read the following and then answer the questions below. Turn in your answers separately from your programming homework. Be sure your answers are organized and clearly written (or typed).

- Ch. 8: 8.1–8.5

1. Write a program in C++ that uses a conditional and a goto statement to implement a loop to compute n factorial for a user-supplied value of n. Note you should not use a loop, but instead use a goto statement.

2. The book states that using goto statements as in Question 1 is generally a bad idea. Why?

3. The book states that the loop exit statements in 8.3.3 (e.g., for break and continue) are actually just simpler versions of goto statements. It goes on to claim that “In fact, it can be argued that they [loop exit statements] improve readability, because to avoid their use results in convoluted and unnatural code that would be much more difficult to understand.” Explain how break and continue are variants of goto statements and state (and explain) your opinion concerning the readability claim made above in the book.

4. Write a set of guarded commands (i.e., a selection statement using guards) using the syntax in 8.5 to determine a letter grade (A, A-, B+, B, B-, etc.) based on a given score (from 0 to 100). Note that 93–100 is an A, 90–92 is a A-, 87–89 is a B+, and so on. For example, if the score is 93, the letter grade should be an “A”, whereas if the score is 88, then the letter grade should be a “B+”.