# Declaration and Initialization

1. Give the declaration for two variables called feet and inches. Both variables are of type *int* and both are to be initialized to zero in the declaration. Use both initialization alternatives.
2. Give the declaration for two variables called count and distance. count is of type *int* and is initialized to zero. distance is of type *double* and is initialized to 1.5.

# Assignment

1. Give a C++ statement that will change the value of the variable sum to the sum of the values in the variables n1 and n2. The variables are all of type *int*.
2. Give a C++ statement that will increase the value of the variable length by 8.3. The variable length is of type *double*.
3. Give a C++ statement that will change the value of the variable product to its old value multiplied by the value of the variable n. The variables are all of type *int*.
4. Which of the following are valid C++ assignment statements? Assume that i, x, and percent are double variables.  
   a. i = i + 5;

b. x + 2 = x;

c. x = 2.5 \*x;

d. percent = 10%;

# Identifiers and Reserved Words(keywords)

1. Which of the following are valid identifiers:

4th new-file file23 C++Program3 New\_File 1\_file

1. Give good variable names for each of the following:  
   a. A variable to hold the speed of an automobile  
   b. A variable to hold the pay rate for an hourly employee  
   c. A variable to hold the highest score in an exam
2. Which of the following is a reserved word (keyword) in C++?
3. Const
4. Include
5. Char
6. return
7. void
8. int
9. Return
10. What is the difference between a keyword and a user-defined identifier?

# Input and Output

1. Give an output statement that will produce the following message on the screen:  
   The answer to the question of  
   Life, the Universe, and Everything is 42.
2. Give an input statement that will fill the variable the\_number (of type *int*) with a number typed in at the keyboard. Precede the input statement with a prompt statement asking the user to enter a whole number.
3. Give an output statement that produces the new-line character and a tab character.
4. What is the output of the following program lines when embedded in a correct program that declares all variables to be of type char?

a = ‘b’;

b = ‘c’;

c = a;

cout << a << b << ‘c’;

# Math in C++

1. Convert each of the following mathematical formulas to a C++ expression:
2. Evaluate: 30-5/2.0
3. Evaluate: 19+7%3-4

# Writing simple programs

1. Write a complete C++ program that writes the phrase “Hello world” to the  
   screen. The program does nothing else.
2. Write a complete C++ program that reads in two whole numbers and outputs their sum. Be sure to prompt for input, echo input, and label all output.
3. Write a program that contains statements that output the value of five or six variables that have been declared, but not initialized. Compile and run the program. What is the output? Check the program on a different environment or with another student. Do you get the same results? Explain.