1. Write, run, and test a C++ program to find the value of 2^n by using a for loop, where n is an integer value the user enters at the keyboard. (Hint: Initialize result = 1. Accumulate result = 2 × result.)

2. Write sections of C++ code to do the following:
   a. Display the multiples of 3 backward from 33 to 3, inclusive.
   b. Display the capital letters of the alphabet backward from Z to A.

   Example:
   a:33 30 27 24 21 18 15 12 9 6 3
   b:Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

3. Write and run a C++ program that accepts 10 values of gallons, one at a time, and converts each value entered to its liter equivalent before the next value is requested. Use a while loop in your program. Use the fact that 1 gallon = 3.785 liters.

4. Write a program that calculates and displays values for y when y = xz / (x - z) .Your program should calculate y for values of x ranging between 1 and 5 and values of z ranging between 2 and 6. The x variable should control the outer loop and be incremented in steps of 1, and z should be incremented in steps of 1. Your program should also display the message Function Undefined when the x and z values are equal.

5. Write a program that generates a random number between 1 and 100. Your pro-gram should then ask the player to guess the value. Guesses should be counted and the player told after each incorrect guess whether the guess was too high or too low, and then the player should be asked for another guess. When the player has found the correct number, your program should display the number of guesses used. The program should stop, whether or not a correct answer was guessed, after the seventh guess.