Although you may consult with other students about program design and/or assembly language concepts, all programs should be entirely your own work. You may not work in teams on programming projects!

1. Write an assembly function named `calc` that takes a double, `x`, as an argument and then returns the result of:

   \[ x^2 + 4.5x - 31.7 \]

   Write C++ and assembly drivers for the function. The drivers should prompt for an `x` value from standard input and then display the result from `calc(x)` on standard output.

2. Write an assembly function named `average` that takes two arguments. The first argument is a pointer to an array of doubles and the second argument is an int that is equal to the number of elements in the array. The function should return the average of `n` floating point numbers. Write C++ and assembly drivers to exercise the function. The driver should prompt the user for the value of `n` and then prompt for the `n` values. After all `n` values have been entered, the average should then be displayed. The C++ driver should dynamically allocate space for the array using `new`. The assembly driver should dynamically allocate space for the array on the stack.

I strongly recommend designing your programs in pseudo-code before trying to implement it in assembly. (I also recommend implementing the algorithms in C++ to ensure logical correctness.)

Email your program source code files and Makefiles in a zip or tar archive to richardson@evansville.edu. Use “CS220 Project 6 – Your Name” as the email subject. Submit hardcopy of your source code also.

Correct programs handed in after 9:00 AM on the due date will receive a top score of 80%. Correct programs handed in after the due date will receive a top score of 50%.