Name:

Please remember you must follow instructions exactly in this course. Submit your code in the usual place on the class server – *qu\_04/lastname\_firstname/p01/* using our standard program structure. Your main program must be called *p01.cc*. Your header file should be called *p01.h*. Your binary must be called *p01.exe*. You must use a make file – the command “make” generates *p01.exe*.

The requirements for this program are:

Write a C program that reads three floating-point numbers from the command line and assigns them to the floating-point variables *a, b* and *c* respectively(e.g., argv[1] is assigned to *a*). The fourth argument should be the value of x:

ece-000\_[1]: p01.exe a b c x

ax^2 + bx + c = <value>

For example:

ece-000\_[1]: p01.exe 1 2 3 10

1(10^2) + 2(10) + 3 = 123

Write a program that computes the value of a second-order polynomial, $y=ax^{2}+bx+c$, and prints the values of $x$ and $y$ to stdout. Your main program must call a function named *poly()* that takes *a, b* and *c* as arguments and returns the value of the polynomial as a float. List the function prototype in your header file (*p01.h*). Include the implementation of this function in a file *p01\_00.cc*.

To compute the terms of the polynomial, you must implement a second function, *mypow()*. This function should have two arguments: (1) a float representing the value to be operated on, and (2) a long representing the exponent. It should return a float containing the value of the first argument raised to the power specified by the second argument. For example, *mypow(2.0, 2)* would produce the square of $2.0$ and return that value ($4.0$) as the float return value. Your function *poly()* must call *mypow()* to calculate each term of the polynomial. Your function *mypow()* should be implemented in a second file named *p01\_01.cc*.

Your main program should be in a file named *p01.cc*. Your functions should be in files named *p01\_00.cc* and *p01\_01.cc*. Your header file should be *p01.h*. Your output should be identical to that shown above.

You must use our standard makefile, such as the one I have been using in the most recent lectures, to compile and link your program. But you need to modify it to accommodate the three source code files named above (*p01.cc*, *p01\_00.cc* and *p01\_01.cc*).

Submit your code in the usual place on the class server – *qu\_04/lastname\_firstname/*.