Assignment 2 Writeup

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1 Functions

- **mysin() -** For mysin() function I implemented it by using several different elements that allowed the code to compile and run. My results lined up exactly with the original $< math.h >$ library of sin() when I ran the test file. This test iterated through the number I assigned and produced the correct output. I was able to do this by creating my own power and factorial functions which assisted in my code.

- **mycos() -** For mycos() function I was able to replicate my results with accuracy similar to that of mysin() function. Following an almost identical format to my previous segment of code, I executed mycos() function by running my test cases which produced my results which had a difference of 0 for all iterations. I was able to do this by following what I had done prior which allowed my code to be functional.

- **myarcsin() -** My code differed for myarcsin() program, where instead I had to first check that my code would run within the range given. Then followed by that I just implemented my math formula and ran it against my test case which proved that it was 100 percent accurate this time around. I had only a minor amount of differences with each iteration which weren't too major but made a difference, I believe that somewhere within my formula a math function may have behaved differently or my formula contained a minor error. Regardless of that my code was able to run smoothly and output both ¡math.h¿ and myarcsin()'s functions.

- **myarctan() -** For myarctan(), I found that it contained the most errors. While running similar to the previous ones it ran for a much longer duration of time and produced a surplus of outputs many of which had slight differences but nothing too major. I followed a similar format where I had an if statement followed by a for loop which contained my formula and executed it. Running it against the test case I was still able to return with 0 difference value.

- **mylog() -** mylog() function was also a successful implementation that produced no different values and matched that of the $< math.h >$'s library

values. By using Newton-Raphsons method of implementing Log in a way that optimized for f(exp) I was able to create a working log function that matched the values of its counterpart.

2 Test File

- **main() -** Finally I programmed a test file to compare each of my functions with the $< math.h >$ libraries functions. I did this by implementing my own test case and running a for loop that went through the given case and printed out the outputs for my function and the math libraries function. This allowed me to create a function that ran everything at once. My assignment was successful in running test cases similar to each other.