HW 1 Programming component

Due on Thursday, Sept 10 at 3 pm

0. Figure out where and how you will use MATLAB.

1. Get/Access a folder on a shared drive and share it with your instructor. Please name this folder something like "MATH_310_*yourname*" .

2. Write a MATLAB function to compute (numerical values for) the nth degree Taylor expansion of $f(x) = \sin(x)$ at $x = 0$. This function should take an argument n.

   For your assignment,

   (a) Deposit your code in the shared drive by Thursday at 3 pm.

   (b) Print out a copy of your code to hand in with the textbook problems.

   (c) Print out a copy of a plot of $f(x) = \sin(x)$ on the range $[-2\pi, 2\pi]$ and the values of your approximation $p_7(x)$ (the 7th Taylor approximation).

   Hint: Since $\sin(x)$ is an odd function, you might find the command `mod(a,b)` useful to check for even or oddness. (There are many ways to address this and this a technical detail that must be addressed.)