Computer assignment 2
(aka your midterm)
In class

We worked out 5.49 analytically. I also provided plots showing the fairly rapid convergence of the series

\[ f(t) = f_{\text{max}}/2 + \sum_{n=1}^{\infty} [a_n \cos(n\pi t)] \]

\[ a_n = \frac{-4f_{\text{max}}}{n^2\pi^2} \quad \text{for } n \text{ odd} \]

\[ a_n = 0 \quad \text{for } n \text{ even} \]
Your assignment

1. Use a computer to make plots of the first ~6 terms of the expansion that we derived in class (this is problem 5.49), setting $f_{\text{max}} = 1$.

2. Then solve problem 5.53 (again making plots), which uses the results from class. Note that you might have trouble with $\text{atan}(\text{infinity})$. If so, just add an epsilon ($0.000001$ to the term).
   **Comment on 5.53a vs b**

3. Do problem 5.50. You first have to find the Fourier coefficients as we did in class (this is not computer work), and then plot them. 6 terms is enough, but add comment

4. Finally make the same plots as you have done for 5.49 but for the answer in 5.50 (with both periods, 2 and 3) AGAIN, **COMMENT ON THIS a vs b**