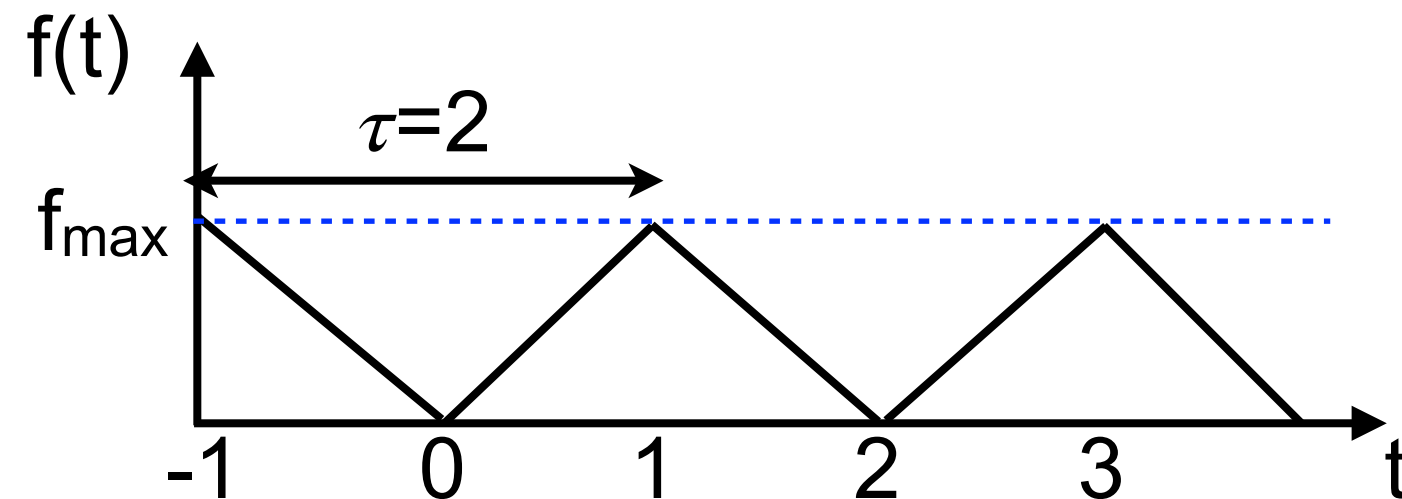# Computer assignment 2 (aka your midterm)

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

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

$$a_n = 0 \text{ for n even}$$

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

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 $f_{max}$ = 1.

2. Then solve problem 5.53 (again making plots), which uses the results from class. Note that you might have trouble with atan(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 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**