Math 325
Spring, 2000

ASSIGNMENT 8, due Friday, April 7

Read Boyce and DiPrima, Sections 10.2-10.4

Do p. 560 #1,6,9,14,20,22,27,28, p. 567 #4,8,18, p. 575 #17,18,21,22,35,36. (**Note:** If I don't get to Section 10.4 by the end of Wednesday's class, the problems on p. 575 will be postponed to Assignment 9.)

Also, for p. 560 #14 (taking $L = 1$) use Maple or Matlab to plot the function and the Nth partial sum of the Fourier series for $N = 2, 5, 10, 20, 50$. Where does the series converge to the function? What does it converge to where it does not converge to the function?

Find the Fourier series of $f(x) = \sin^2(x)$, $-\pi \le x \le \pi$.

Also, on p. 575 #17,18 and #21,22 (with $L = \pi$) use Maple or Matlab to plot the function and the partial sums of the Fourier series for $m \le N$ where $N = 2, 5, 10, 20$. Compare the corresponding plots.