Homework #4: Phys 3320: Prof. Olness Fall 2008

Due Nov. 7

Hint: Use the sample mathematica file posted on the web page:
`http://www.physics.smu.edu/~olness/www/08fall1320/3320/`

1,2,3) Using Mathematica, follow my example for the 3 functions given and:

- Plot the sample function:
- Compute the Fourier coefficients
- Plot the series with different numbers of termd
- Make a "frequency domain" plot of the coefficients
- Re-write the Exp series as a Trig series
- Verify that they are identical

4,5) By hand, compute the Sin coefficients for

4) f(x)=x

5) f(x)=0 for x=[0,1/2] and f(x)=1 for x=[1/2,1]

on the interval x=[0,1].