

PHGN511 Homework #7

Due Friday, Oct. 22, 2004 at the beginning of class
Fun and games with Fourier Series and Transforms

1. Butkov 4.5 For this one, I want you to do the problem in a mathematica notebook using the `FourierTrigSeries` function. You might find the `UnitStep` function useful as well. When you finish finding the series, go ahead and plot each series solution through 4 or 5 terms and compare the result to the actual functions. Since Mathematica always assumes a function is periodic from -0.5 to 0.5 in its `FourierTrigSeries` expansion, you will have to adjust `?` to get a workable periodicity.
2. Butkov 4.6. This one I want you to work out by hand. You can check your work with Mathematica.
3. Butkov 7.2b
4. Butkov 7.5a