

**EE322 Fall 08 Homework Problem Set 26 (PS26)**

Be sure to show your work.

1. Using the complex Fourier Series equation (eq. 8.8 on page 242), compute the Harmonic function  $X[k]$  for the signal  $x(t) = \text{rect}\left(\frac{t}{10}\right)$  over the time period from  $-10 \leq t \leq 10$ . Use the Euler identities to write your answer in terms of a sine function, then write your sine as a sinc function.
2. Using the complex Fourier Series equation (eq. 8.8 on page 242), derive a mathematical expression for the Harmonic function of the periodic signal shown below. Note: your answer can't be simplified very much.

