

EE 483 Communications Systems I  
Instructor: Dr. Stella Batalama  
Homework Set 1  
Assigned : September 9, 2004  
Due : September 16, 2004

1. Prove the Fourier properties given in Table A6.2 (pg. 763 of textbook).

2. Evaluate the Fourier Transform of the damped sinusoidal wave.

$$g(t) = e^{-t} \sin(2\pi f_c t) u(t)$$

where  $u(t)$  is the unit step function.

3. Determine the inverse Fourier Transform of the frequency function  $G(f)$  defined by the amplitude and phase spectra given below.

