

ECE 500 - HW 09/27/99

1. Given that $\mathcal{F}\{x(t)\} = \frac{\sin(\omega/2)}{\omega/2}$,

write the Fourier transform of

a) $x(2t+1)$

b) $e^{-j2t} x(t+1)$

c) dx/dt

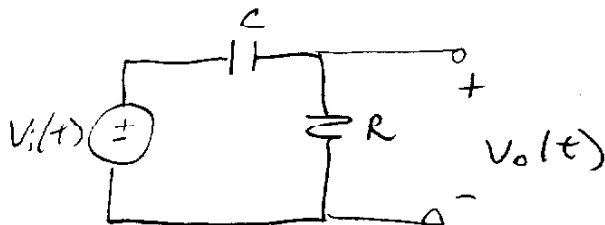
d) $x(1-2t)$

e) $x(1-t)$

f) $x(t) \cos(t)$

2. What is $x(t)$?

3. Find the impulse response of the following circuit using Fourier Transform Methods:



4. Plot the magnitude and phase spectrum for

$$x(t) = e^{-3t} u(t)$$