

ECE 366 HW #6
Fall 2008
Due 10/24/08

- Office Hours: MW 3:30-5:00 p.m.
- The following questions are from Lathi's book, Second Edition.
- Read Chapter 6.4 and 7.1-7.3
- You should turn in your solutions to all of the problems.

1. [20] 6.4-2
2. [15] 7.1-8
3. [20] 7.2-4
4. [15] 7.3-2 Solve this problem for $x_1(t), x_3(t), x_4(t)$.
5. [20] 7.3-6
6. [10] Use the duality property of Fourier transform to answer the following questions:

- a) Given $e^{-|t|} \xleftrightarrow{F.T.} \frac{2}{\omega^2 + 1}$, find the Fourier transform of $\frac{1}{2\pi(t^2 + 1)}$.
- b) Find the Fourier transform of $\delta(t + T) + \delta(t - T)$ using the duality property.