

ELEN3801 - Fall 2009

Homework 8

Due Thursday November 12th at the **beginning** of class
(Mudd 227 9:10am)¹

Carefully justify ALL your answers

- 8.1 - Solve problem 4.2-1 of the textbook (only parts (a) (c) (d) and (f)).
- 8.2 - Solve problem 4.3-7 of the textbook.
- 8.3 - Let $x(t)$ be a real signal and $X(\omega)$ be the corresponding Fourier transform. Prove that
- a) If $x(t)$ is an even signal then $X(\omega)$ is a real and even function.
 - b) If $x(t)$ is an odd signal then $X(\omega)$ is an imaginary and odd function.
- Hint:** Use the conjugation property we saw in class today, together with the time-reversal property.
- 8.4 - Solve problem 4.3-10 of the textbook.
- 8.5 - Solve problem 4.3-11 of the textbook.

¹You can always hand-in the homework earlier if you so desire - just give it **in hand** to me or to one of the TAs, or leave it in **my** mailbox (in the EE office on the 13th floor of Mudd).