

Utah State University
ECE 3640
Homework # 9
Due Friday, April 7, 2006

- Reading

1. Chapter 4

- Homework:

1. (5 pts) Problem 4.3-4
2. (5 pts) Problem 4.3-5
3. (5 pts) Problem 4.3-6
4. (5 pts) Problem 4.3-7
5. (5 pts) Problem 4.3-9
6. (5 pts) Problem 4.3-11
7. (5 pts) Problem 4.4-1
8. (5 pts) Problem 4.4-3
9. (5 pts) Problem 4.4-4
10. (5 pts) Problem 4.4-5
11. (5 pts) Problem 4.4-6
12. (5 pts) Problem 4.5-1
13. (5 pts) Show that

$$e^{-t^2/2\sigma^2} \leftrightarrow \sigma\sqrt{2\pi}e^{-\sigma^2\omega^2/2}$$

You will need to complete the square, and use the fact that

$$\int_{-\infty}^{\infty} e^{-x^2/2} dx = \sqrt{2\pi}$$

14. (5 pts) Problem 4.6-1
15. (5 pts) Problem 4.6-2
16. (5 pts) Problem 4.6-3