

ECE-205 : Dynamical Systems

Homework #5

Due : Tuesday October 6, 2015 at 5 PM

Exam 2: Thursday October 15

(Most of these problems are short drill type problems)

1) Chapter 5, Problem 5.1

2) Chapter 5, Problem 5.2

3) Chapter 5, Problem 5.3

4) Chapter 5, Problem 5.4

5) Chapter 5, Problem 5.5

6) Chapter 5, Problem 5.6

7) Simplify the following integrals:

$$y(t) = \int_0^t e^{-(t-\lambda)} e^{-\lambda} d\lambda \quad y(t) = \int_{-1}^{t-1} e^{-3(t-\lambda)} e^{-\lambda} d\lambda \quad y(t) = \int_2^{t+1} e^{-2(t-\lambda)} \lambda e^{-2\lambda} d\lambda$$

Scrambled Answers:

$$y(t) = \frac{1}{2} [e^{-t-2} - e^{-3t-2}] u(t) \quad y(t) = t e^{-t} u(t) \quad y(t) = \frac{1}{2} [t^2 + 2t - 3] e^{-2t} u(t-1)$$