

**ECE 341: Probability and Random Processes for Engineers, Spring 2012**

Homework 11

**Name:**

Assigned: 04.04.2012

Due: 04.11.2012

**Problem 1.** Textbook problem 6.1.3. Do it on your own rather than looking at the solution.

*Solution 1:*

**Problem 2.** Let  $U$  be a continuous random variable with uniform distribution over  $[u_1, u_2]$ .

- Find the moment generating function of  $U$ .
- Use the MGF to calculate the first moment of  $U$ .
- Use the MGF to calculate the second moment of  $U$ .

*Solution 2:*

**Problem 3.** Textbook problem 6.7.3 includes Matlab. Do it on your own rather than looking at the solution.

*Solution 3:*

**Problem 4.** Use the MGF to find the 1st, 2nd, 3rd and 4th moments of a Gaussian random variable with mean 0 and variance  $\sigma^2$ .

*Solution 4:*

**Problem 5.** Textbook problem 6.6.2. Do it on your own rather than looking at the solution.

*Solution 5:*