

ECE 3075A - Summer 2003
Problem Set #4

Assigned: June-9-2003
Due Date: June-16-2003

General Note:

- Homework is due at class time on the “Due Date”; no late homework will be accepted.
- Make a **COVER PAGE** for your homework, including your name, GT number, the problem set number, due date and the date you actually turn it in.

Reading: In *Probabilistic Methods of Signal and System Analysis*, Chapter 4.

PROBLEM 4.1:

We consider a die-throwing experiment, each trial of which consists of two stages of die throwing. In the first stage, a single die is thrown. The outcome determines the number of dies to use in the second stage. The outcome of the second stage is the reported outcome of the trial. If the outcome of the first stage is an odd number, a single die is thrown in the second stage of the trial; if the outcome of the first stage is an even number, two dies are used in the second stage.

- a. Find the expected value of the outcome.
- b. Given that “5” is reported as the outcome, what is the probability that one die was used in the second stage?

PROBLEM 4.2:

Probabilistic Methods of Signal and System Analysis, Chapter 3, Problem 3-6.1.

PROBLEM 4.3:

Probabilistic Methods of Signal and System Analysis, Chapter 3, Problem 3-7.3.

PROBLEM 4.4:

Probabilistic Methods of Signal and System Analysis, Chapter 3, Problem 3-7.5.

PROBLEM 4.5:

Probabilistic Methods of Signal and System Analysis, Chapter 4, Problem 4-2.5.

PROBLEM 4.6:

Probabilistic Methods of Signal and System Analysis, Chapter 4, Problem 4-3.4.