MATH 464
HOMEWORK 1

SPRING 2016

The following assignment is to be turned in on
Thursday, January 28th, 2016.

1. Let A, B, and C be events (subsets) of a sample space Ω.
Write each of the following events in terms of A, B, and C using intersections, unions, and complements.

(a) None of A, B, C occurs.
(b) At least two of A, B, C occur.
(c) Exactly one of A, B, C occurs.
(d) Exactly two of A, B, C occur.
(e) Exactly three of A, B, C occur.
Hint: Read Section 1.2 of the book or the pdf file on semantics.

2. Do exercises 10, 12, and 17 on pages 5 and 7 of the book.

3. Consider an *unfair* coin which has probability 1/3 for heads and 2/3 for tails. Do an experiment where you flip this coin until you get heads and stop.
(a) Describe the sample space.
(b) What is the probability it takes exactly 5 flips?
(c) What is the probability it takes at least 3 flips?