Math 4740
Test 2 Study Guide

Test 2 covers:

- HW 3
- HW 4

Homework 3:

- Checking if two events are independent or not. Problems 1, 2.
- Conditional probability. Problem 3, 4, 10.
- Law of total probability. Can use formula or draw tree. Problems 2, 5, 6, 7, 8.
- Reversing the conditional probability formula. Problems 6, 9.

Homework 3 extra problems:

- Doing independent experiment over and over until either event A or B happens. Computing the probability A occurs before B with the formula $P(A) / (P(A) + P(B))$

  Problems 1,2

Homework 4:

- Calculating $P(X = k)$, $P(X <= k)$, $P(X > 0)$, and $E[X]$. Drawing a picture of p and F. Problems 1, 3, 4, 6, 7.

- Don't worry as much about problems 2 and 5. These are the infinite probability spaces. They are good practice though for understanding how to make a tree and multiply the branches to get probabilities like in the law of total probability.

Homework 4 extra problem:

- This is another expected value one.