Concepts to know (Exam 3)

This exam covers Sections 7.2-7.6 and 8.1-8.4 (It is recommended to review sections 6.1-7.1, because concepts from these sections will be used.)

7.2-7.3 Uniform sample space, Probability using Venn diagrams, Probability using tables, Probability using formulas.

7.4: Probability using Venn diagrams, trees, tables, counting techniques (review the multiplication principle, permutation, and combination and all probability and and counting methods); $P(E) = \dfrac{n(E)}{n(S)}$ for a uniform sample space S.

7.5 For the conditional probability of event B given event A, the reduced sample space is the given event A.

$$P(B|A) = \frac{n(A \cap B)}{n(A)} = \frac{P(A \cap B)}{P(A)}, \quad P(A) \neq 0.$$

Be able to draw a probability tree diagram, and label each branch with the appropriate probability.

Know to apply the product rules in a tree diagram.

Be able to judge whether 2 events are independent; test for independence; using the concept of independence.

7.6 You do not need to memorize Bayes theorem (use the conditional probability formula).

8.1 Be able to classify a random variable as finite discrete, infinite discrete, or continuous.

Be able how to make the probability distribution table of a random variable X.

Be able to read and graph a histogram of a probability distribution.

8.2 Understand the mean of a set of data and be able to find the mode and median of a set of data.

Be able to find the expected value of a random variable X by hand and by calculator.

Fair game: $E(X) = 0$.

Odds: Find odds (against/favor) if $P(E)$ is given or found; find $P(E)$ if the odds for E are known to be $a : b$

8.3 Be able to find the mean, median, and standard deviation from your calculator. Note: We skip the Chebychevs inequality.

8.4 To know the criteria of a binomial experiment.

Binomial Distribution (including expected value of binom. distr.: $\mu = np$): meaning of n, p, q, r.

Be able to use the TI functions under the DISTR menu to find the binomial probabilities: binompdf and binomcdf.

Any additional topic discussed in class.