

## Concepts to know Exam 1

### Chapter 6 and Chapter 7

- Set operations.
- Subsets and Elements.
- disjoint
- Translating sets to English.
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- Filling in a Venn Diagram
- Shading Venn diagrams
- Counting
  - Venn Diagrams
  - Tables
  - Trees
  - Multiplication Principle
  - Combinations
  - Permutations
  - Counting what you want by counting what you don't want
  - Formulas.
- Sample Space
  - Events
  - Outcomes
  - Mutually exclusive
- Probability
  - equally likely
  - uniform/non-uniform sample space
  - probability distribution
  - Venn diagrams
  - Trees
  - tables
  - counting techniques
- Conditional probability
  - Reduced sample space
  - Formula
- Backwards tree
- Independent Events
  - Test for independence: Two events, A and B, are independent if  $P(A \cap B) = P(A)P(B)$
  - Using the concept of independence
- All problems like those on the handouts
- Any additional topic discussed in class.