Chapter 14: Basic Probability Rules
Legitimate Probability assignments. \(0 \leq P(A) \leq 1\) for all \(A\)
\(P(S) = 1\) for \(S\)

\[P(A^c) = 1 - P(A)\]

A \& B are Disjoint then
\[P(A \text{ or } B) = P(A) + P(B)\]

A \& B are Independent then
\[P(A \text{ and } B) = P(A) \cdot P(B)\]

Chapter 15: General Probability Rules

General Addition Rule
\[P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)\]

p. 404-408, 1-6

General Multiplication Rule
\[P(A \text{ and } B) = P(A) \cdot P(B | A)\]

Tree diagram problems 33-40, 43, 44

Conditional probabilities
\[P(A | B) = \frac{P(A \text{ and } B)}{P(B)}\]


Chapter 16: Random Variables

Expected Value (No Standard Deviation)

p. 427-428: 1, 2, 3, 17a, 18a, 27a-d, 28a-d

Chapter 17: Binomial Distribution

We use Binom pdf for individual values

Use Binom cdf for summing up several values

\[M = np \quad \sigma = \sqrt{npq}\]

p. 447-450: 19 bdefj, 21ab, 23a-c