Some Class
Random Examples

Devin D. Droddy

Contents

Chapter 1

1.1 Intro to Conditional Probability

Conditional probability is a probability that changes when new information is given. The probability of event A, knowing that event B has ocurred is known as the probability of A *given* B, denoted as $P(A|B)$. The formula for conditional probability is $\frac{P(A \cap A)}{P(B)}$.

1.2 Two-way Tables

> **Definition 1.2.1: Two-way Table**
>
> A table that records data that pertains to two different categories.

Example 1.2.1 (Two-way Table)

	Boys	Girls
Prefer Football	18	6
Prefer Hockey	10	16

We can use two-way tables to find conditional probabilities. For instance,

$$P(\text{Prefers Football}|\text{Boy}) = \frac{\frac{18+6}{18+6+10+16} \cdot \frac{18+10}{18+6+10+16}}{\frac{18+6}{18+6+10+16}} = \frac{\frac{24}{50} \cdot \frac{28}{50}}{\frac{24}{50}} = \frac{\frac{672}{2500}}{\frac{24}{50}} = \frac{14}{25}$$